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ABSTRACT

Designed for use in Trident Technical College's Secretarial Science Instructional Lab, this learning module provides self-instructional lessons and self-tests to teach students to operate the IBM 3741/3742 Data Entry Station using most of the features of the machine. Each module focuses on one or more characteristics of the machine, providing learning objectives, illustrations, detailed explanations and instructions, exercises, and a self-test and answer key. The 15 lessons focus on definitions of word processing terminology; handling and caring for the IBM 3742's diskette; the uses of data set labels; special keys and features of the machine; recording and altering records on a diskette; loading programs from the diskette; and operating the IBM 3742's disk 2 drive station from the disk 1 station. In addition, a brief description of the Secretarial Science In addition, a brief description of the Secretarial Science Instructional Lab is provided, which examines its purpose, operations, equipment, independent study opportunities, testing center functions, and benefits. (AYC)

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THE IBM 3741/3742 DATA ENTRY STATION SELF-INSTRUCTIONAL MODULE

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VC 820 479

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TRIDENT TECHNICAL COLLEGE
SECRETARIAL SCIENCE INSTRUCTIONAL LAB

The TTC Secretarial Science Instructional Lab has been in operation since 1979. The lab is a converted conference room, and, therefore, it is small. The room will house 30 students at full capacity. When its small size is considered, the fact that there were over 8,000 recorded student visits in 1981 becomes amazing.

Purpose of the Lab

Students now have the opportunity for practice outside the classroom, for review of classroom instruction, and, to a limited degree, for testing on demand.

Operation of the Lab

The lab is open from 9 a.m. until 9:45 p.m. weekdays and on Saturday morning. Second-year students are hired as paraprofessionals. They provide support by assisting students with problems they may have in completing their assignments, by proctoring tests, by monitoring equipment and media, and by completing clerical tasks for the faculty. The paraprofessionals are trained on all audiovisual and office equipment which is available in the lab.

Equipment Availability

In addition to typewriters, students have access to calculators, word processors, data entry equipment, and transcription machines. Copies of all media used in the classroom are available for students in the lab. A videotape unit, several slide/tape machines, and audiotape players are also provided for students.

Independent Study Opportunities

Presently, because there are limited numbers of word processors and data entry equipment available for student training and since curriculum students and continuing education students must share the equipment, they learn to operate these machines using self-instructional packets. Appointment schedules are maintained in the lab, and paraprofessionals monitor and assist students who are taking these courses.

Testing Center Functions

Faculty members may leave testing materials in envelopes for students. If a student misses class on a test day or needs a retest, valuable classroom or teacher time is not spent in taking care of this testing. Completed tests are placed in the instructors' mailboxes.

Charleston has several large military bases, and Civil Service shorthand and typing tests are provided free of charge in the lab. Lab para-professionals proctor these tests and prepare documentation of test results. Some testing for state civil service is also done.

Tests for certain courses may be taken on demand. Standardized testing instruments are on file in the lab for most courses.

Benefits of the Lab

Faculty offices are adjacent to the lab and increased faculty-student contact has been one positive result of the lab. The faculty believes that students now have a fairer chance of succeeding, since those students who cannot afford a typewriter now have access to one. An increase in the percentage of students who start Secretarial Science programs and who finish has been noted. We believe this can partially be attributed to the lab.

Materials Available

The following self-instructional packets are on file in the lab:

IBM Mag Card II Typewriter
IBM Electronic 75 Typewriter
IBM 3742 Data Entry Stations
Lanier Word Processor

INTRODUCTION

The materials in this instructional module have been prepared so that you may proceed as rapidly as possible, or as slowly as necessary, in order to attain full comprehension of the material.

You must take four production tests and one theory examination in order to pass the module. Each counts equally. You must pass all tests. If you fail one, you will be given the opportunity to retake it. There is a catch to this, however, in that your original test grade will be averaged with the re-take test grade when computing your module grade.

As soon as you have finished the lessons preceding the test check points, you should request from the instructor or the lab paraprofessional the test you need to take. You may not use the reference materials when taking tests. You will be allowed one-half hour for each test.

Production Test 1 - Take it after you have completed Lesson 6. You will have to prepare a data set label and type ten records.

Production Test 2 - Take it after you have completed Lesson 9. You will have to prepare a data set label, write programs for information to be keyed from a business form, enter the programs, and key five records from a business form.

Production Test 3 - Take it after you have completed Lesson 10. You will have to write a right adjust program, prepare a data set label, and key ten records that have right adjust fields.

Production Test 4 - Take it after you have completed Lesson 11. You will have to write a program, prepare a data set label, and key five records. You will then have to verify the data set.

Production Test 5 - Take it after you complete Lesson 14. You will have to prepare a data set label, key a program, and enter records that will be accumulated.

The final theory test questions are tkaen directly from the Self Test questions that appear at the end of each lesson. The test questions may be re-worded!

If you have problems, check with the instructor or the para-professional.

MODULE OBJECTIVE

When the student has completed the self-instructional lessons, self-tests, and post-tests, he or she should be able to operate the IBM 3741/3742 using most of the features of the machine.

The information (data) that is given to the computer is called input. The act of entering data into the computer is called inputting. It used to be that data was input on paper cards which were typed with a keypunch machine. Some businesses still use keypunch machines, but they are being used less and less. More businesses are using magnetic devices for input these days. The paper cards and the magnetic devices are called input media.

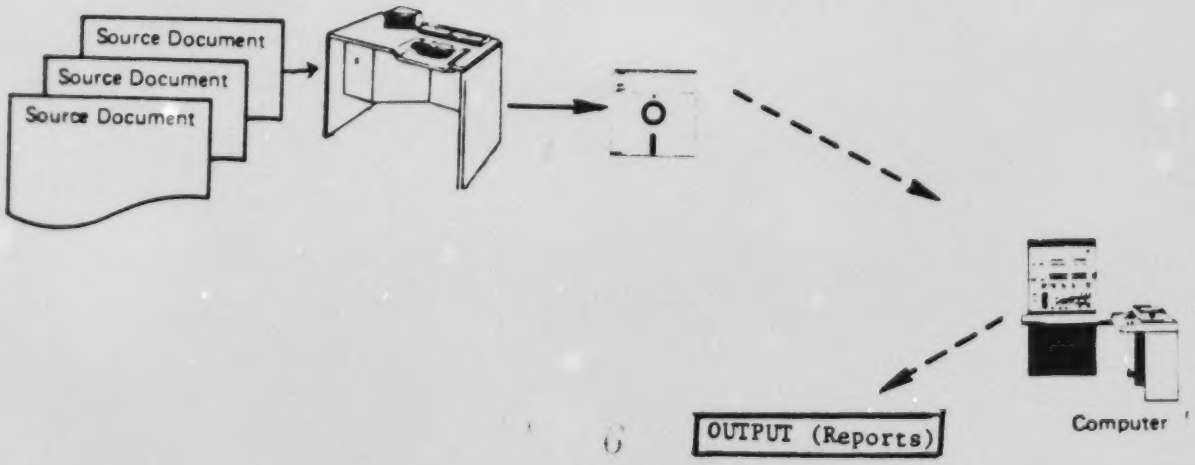
A person called a programmer specializes in coding the input so that the computer knows what to do with it and how to prepare the output. You do not have to worry about this. The part of data processing that you will be concerned with is the data entry phase (inputting). People who use a keypunch machine are called keypunch operators. People who use a data entry machine are called data entry operators or data input operators. In this module of instruction, you will learn how to type information (data) onto magnetic media.

The way that the input and output is set up on a page is called the format. You must be very careful when you are entering data to type the characters in exactly the spaces that are designated. If you are careless, the machine may not be able to read your input.

You may have filled in forms where there were little numbered boxes for each letter or number. This type of form is set up to help data entry operators input the data in the correct positions.

Groups of like data are known as data sets. Let's again use your experience in school to help you understand this term. Suppose you wanted the computer to print out a list of the names and addresses of all the students at TTC. This could be a data set. Data sets are made up of records. Continuing with our example, there would be a record for you and a record for each of the other students at TTC within the data set which we might label "TTC Students".

You have now learned many terms which you will need to know in order to proceed with the data-entry module. Take the Self Test to make sure you understand these terms, then proceed to Lesson 2.



Lesson 1 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to identify the following terms by matching the terms to a list of definitions.

1. Data processing
2. Source documents
3. Data base
4. Programmer
5. Keypunch operator, data input operator, and data entry operator
6. Input and output
7. Data set
8. Format
9. Fields
10. File
11. Records

Let's consider first the term data processing. What is data? Data is information. It may be information pertaining to sales, or to inventory, or to payroll, or to students, and so on.

The term processing means that the information or data is compared, analyzed, and put in a more usable form for a business or a person.

Perhaps an example that particularly pertains to students would help you understand the term better. At the end of each quarter, your grades are submitted by your instructors to the data processing center. The grade reports are called source documents. They are the source of information about your grades. Your name and your student ID number are entered into the computer. The number of each course you took is also entered into the computer, along with the grade you earned. All this information about you is data.

The computer stores information about you in a "file." It has a file which contains information about all the courses you took in the past and the grades you earned. Information that is stored in a computer is called the data base. TTC's data base includes your address, your age, your marital status, and other information about you. The computer will average all the grades you had on file with your new grades. It will compute an average for the quarter and an overall grade point average. It will then store the new information with the old information. All of these activities are called data processing. The computer processes grade information about you and everyone you go to school with at the end of each quarter.

As if that weren't enough, the computer prepares a copy of your grade report for you. It finds your address and prepares the grade mailer that you receive after each quarter. Your advisor also receives a copy of the report of your grades. The reporting part of data processing is the most important part. It is why we have data processing. The reports that the computer prints out are known as output.

Self-Test Lesson 1
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Match each of the following terms with their definitions.

_____ 1.	Data Processing	a. Information fed into the computer.
_____ 2.	Input	b. Source of information.
_____ 3.	Source Document	c. Information stored in a computer.
_____ 4.	Data Base	d. Comparing and analyzing data; placing data in a more usable form.
_____ 5.	Data Sets	e. Groups of like data.

DIRECTIONS. Insert the correct word(s) in the blanks below. A vocabulary list is provided.

6. Two examples of input devices are _____ and _____.

7. The reports that the computer prints out are known as _____.

8. A person called a _____ specializes in coding the input so that the computer knows what to do with it and how to prepare the output.

9. People who use a data entry machine are called _____ or _____.

10. The way that the input and output is set up on a page is called the _____.

FORMAT
MAGNETIC DEVICES
OUTPUT
PROGRAMMER

DATA ENTRY OPERATOR
DATA INPUT OPERATOR
PAPER CARDS

Self-Test Lesson 1
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Match each of the following terms with their definitions.

D	1. Data Processing	a. Information fed into the computer.
A	2. Input	b. Source of information.
B	3. Source Document	c. Information stored in a computer.
C	4. Data Base	d. Comparing and analyzing data; placing data in a more usable form.
E	5. Data Sets	e. Groups of like data.

DIRECTIONS. Insert the correct word(s) in the blanks below. A vocabulary list is provided.

6. Two examples of input devices are paper cards and magnetic devices.
7. The reports that the computer prints out are known as output.
8. A person called a programmer specializes in coding the input so that the computer knows what to do with it and how to prepare the output.
9. People who use a data entry machine are called data entry operators or data input operators.
10. The way that the input and output is set up on a page is called the format.

FORMAT
MAGNETIC DEVICES
OUTPUT
PROGRAMMER
DATA ENTRY OPERATOR
DATA INPUT OPERATOR
PAPER CARDS

Lesson 2- THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson you will be able to

1. Properly handle and care for the diskette
2. Insert the diskette into the machine and remove it from the machine
3. Read the basic (required) parts on a data set label
4. Reset the machine when the screen flashes or when the machine buzzes
5. Identify the following terms
   a. Track
   b. Sector
   c. Status line
   d. Drive unit
   e. Error Code
   f. CHAR BKSP
   g. CHAR ADV
   h. Cursor
   i. Loading
   k. Data set label

The IBM 3742 uses a floppy disk, which is called a diskette, to store information that you type onto it. When you have typed all the necessary information onto a diskette, it may be read from the diskette, by a machine, into the computer.

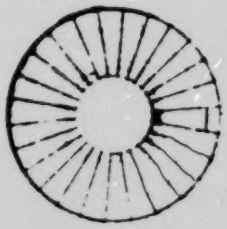
The diskette may be used over and over again if you are careful with it. This is one advantage that it has over punched cards. Once a card is punched, it can never be used to input different information. Just as you can record over the top of information that was recorded on an audiotape, you can record over the top of information that was recorded onto a diskette. As you record over the top of the old information, the old information is erased and replaced by the new information.

We won't get too technical about this, except to say that it is accomplished electronically. Because the diskette is sensitive, you must be very careful with it. You must never handle the magnetic surfaces because even the oil from your skin can damage it.

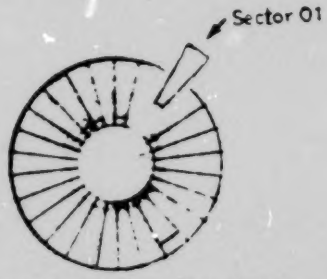
Here are some rules for handling the diskette:

1. Do not expose it to direct sunlight.
2. Do not lay it on a hot surface.
3. Always keep the diskette in its jacket when you are not using it, and store it on edge and not flat.
4. Do not expose it to a magnet.
5. Do not keep any paper or other material in the diskette jacket along with the diskette.
6. Do not write on the diskette labels with pens or pencils. You may write on the labels with a felt tip pen—lightly please!

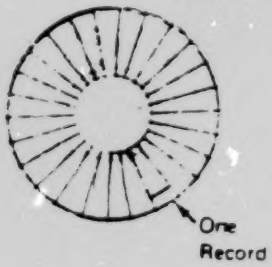
Although you cannot see it, the diskette is divided into parts. There are 75 circular tracks on each diskette. They are numbered 00 through 74.



The diskette is also divided into 26 pie-shaped pieces, which are called sectors.

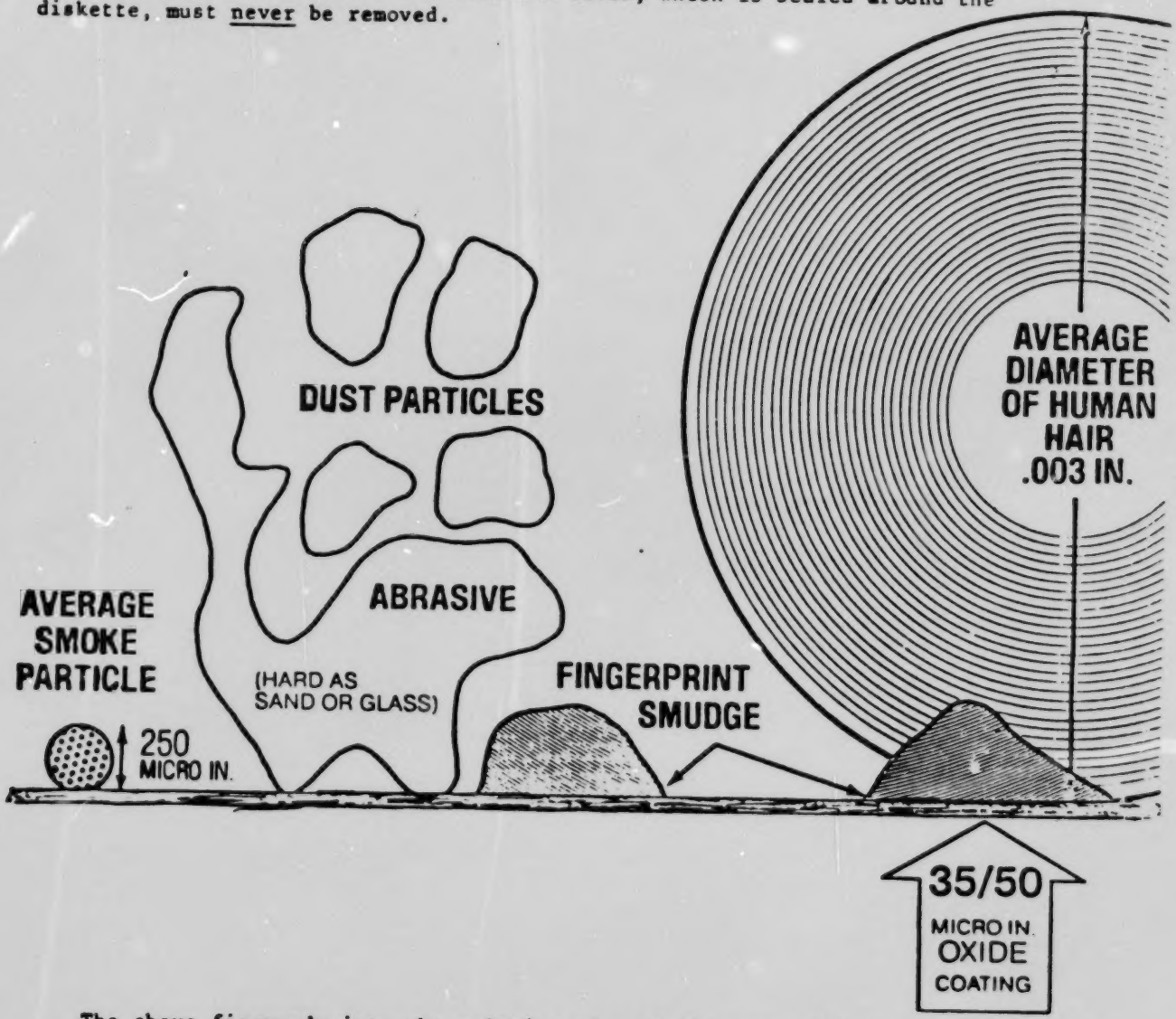


Each miniscule separation of a track by a sector will hold one record. Do you remember the term record from Lesson 1? Each track, therefore, can hold 26 records. Using our example again, you could store the names and addresses of 26 TTC students on a single track of a diskette, one in each sector.



Track 00 and track 74 are reserved for special purposes. The records are recorded in tracks 01 through 73. Since each track holds 26 records, you can record up to 1,898 records on a single diskette (73 tracks x 26 sectors = 1898). To continue with our example, you could record the names and addresses of about one-third of the students who attend Tech on a single diskette.

When you first purchase your diskette, it will have a loose label. You should write your name on this label and then affix it to the upper left side of the diskette cover. You may write on the label only with a felt-tip pen once it is pasted onto the diskette. The pressure from an ordinary pen could damage the diskette. The diskette cover, which is sealed around the diskette, must never be removed.

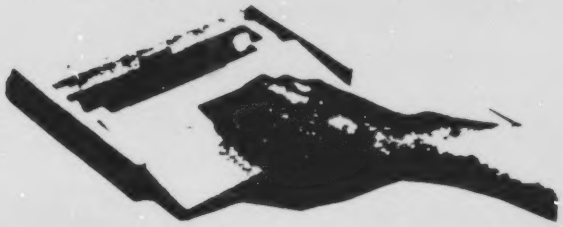


The above figure depicts the relative size of the magnetic coating on the diskette to various environmental factors, such as smoke and dust.

If you are the only person who is working at the dual station 3742, you should sit at the station which has the power switch beside it.

Turn on the power switch.

Now depress the latch over the diskette drive door. It will spring open.



Insert your diskette with the paper labels up and facing you, then push the door closed. You will hear various clicking sounds as the machine readies itself for work. When the machine has finished this process, called loading, the screen will flash and the following display should appear in the display unit window.

```
001        0  A  A                    00008          X R

HDR1 NAME                              80 01001 73026
                                             01001
```

This display is called a data set label. A data set is a group of related records, such as a payroll records. Data set labels identify the name of the data set, the record size, and the physical location of the records on the diskette. Data set labels are written on the very outside track of a diskette. This track is not track 01. It is track 00. It is possible to separate the record spaces on a diskette into as many as 19 separate data sets. Each data set would have to be labeled on track 00, which is called the index track.

If the display in the window is flashing depress the key labeled NUMSHIFT and the key labeled RESET. Ask the instructor or the lab assistant for help if you cannot make the screen stop flashing by taking this action.

Look at the top line of the display. This is called the status line because it tells you various things you need to know as you are working with the machine.

```
001          O A A                00008          X R
HDR1 NAME                                  80 01001 73026
                                                   01001
```

status line

Each of the grouped characters is called a field. A field is a division of a data set label or a record. Each field on the data set label contains information for your use.

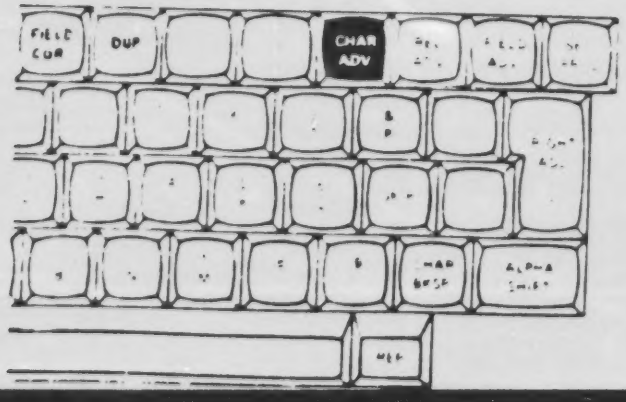
The first field tells you where, on the data set label or record, your cursor is located. There's another term! Cursor! The cursor is an underline mark that moves across the screen as you type. It helps you keep track of where you are.

cursor position indicator →

```
001          O A A                00008          X R
HDR1 NAME                                  80 01001 73026
                                                   01001
```

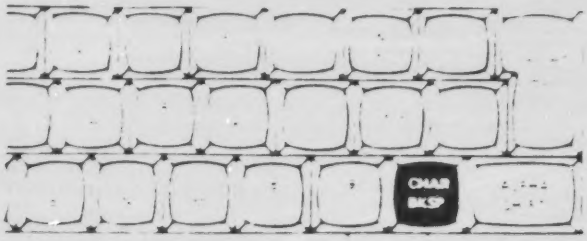
The cursor is currently located on the first space. Look at the upper right of the keyboard. Find a button labeled CHAR ADV. CHAR ADV stands for the words "Character Advance." You may use this button to move the cursor forward. Depress the CHAR ADV button once and watch the position indicator change to 002 and the cursor move to the D position in the word HDR1 on the screen.

Character Advance



```
002   O A A                    00008          X R
HDR1 NAME                                 80 01001 73026
                                                  01001
```

Now look at the right of the keyboard, beside the key that is labeled Alpha Shift. Do you see the button labeled CHAR BKSP? CHAR BKSP stands for the words "Character Backspace." Tap it once and watch the position indicator change back of 001. The cursor will again be positioned under the H.




```
001   O A A                    00008          X R
HDR1 NAME                                 80 01001 73026
                                                  01001
```

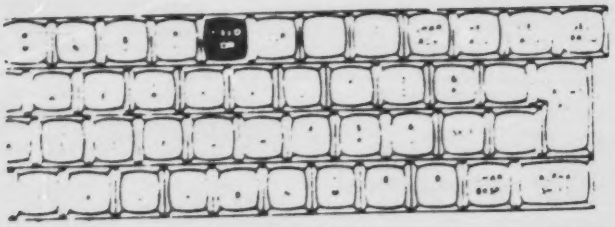
Now look at the next field on the status line. This is where a program number will appear. You will learn what this means in a later lesson.

Program number field

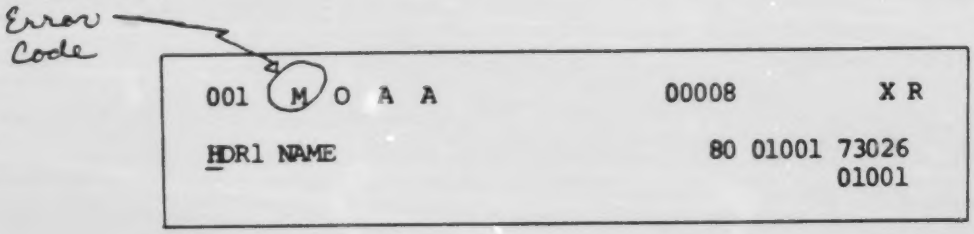
```
001   O A A                    00008          X R
HDR1 NAME                                 80 01001 73026
                                                  01001
```

Between the position indicator field and the program number field is a field that the machine uses to tell you when you have made a mistake. If you have done nothing wrong, it remains blank. If you make a mistake, the screen will flash and an error code (either an alphabetic or numeric character) will appear. Let's make a mistake so that you can see how it works.

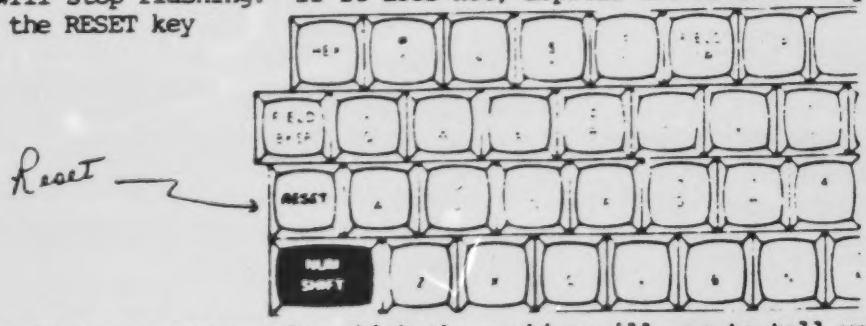
Look at the top row of keys on the keyboard, to the left. Do you see the key labeled FIELD COR? Depress it once.



Your screen should now be flashing and your status line should look like this:



Depress the RESET key on the lower left side of the keyboard. The machine will stop flashing. If it does not, depress the NUMSHIFT key and then tap the RESET key

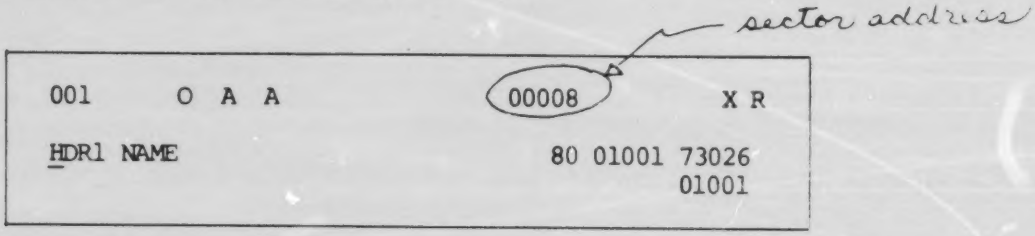


There are many error codes which the machine will use to tell you the kind of error you have made. A chart is provided by IBM which defines each code and describes how to correct the error. Basically, however, if an alphabetic character appears, depress the RESET key, and if a numeric character appears, depress the NUMERIC SHIFT key, and, while holding it down, tap the RESET key.

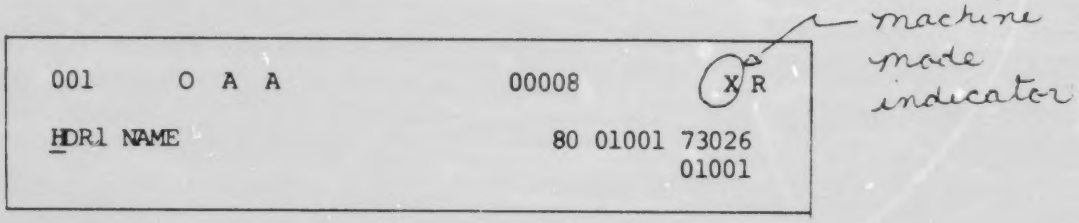
The next two fields give you information about your program. You will learn more about these fields later.

The field which contains the numbers 00008, tells the position of the Read-Write Head on the diskette. You can think of the read-write head as being similar to the needle on a phonograph. The read-write head is capable

of reading information that is already on the diskette and of writing information onto the diskette. The read-write head is currently reading track 00, sector 08. This is called the Sector Address and it tells you where the Read-Write head is located at the Disk 1 station. The zero in the middle simply is used as a place holder and has no meaning. Track 00, sector 08 is the first space on the diskette which is available for data set labels. Track 00, sectors 01-07 are reserved for special purposes. Never change the information at these record addresses.

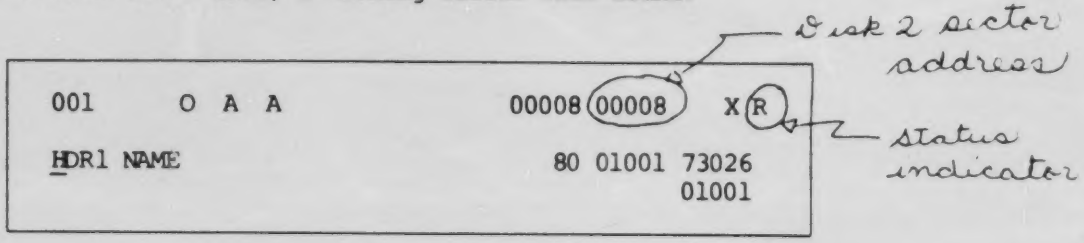


The next position is called the Machine Mode indicator. It tells you what the machine is doing at any given time. An X in this position tells you that you are in the Index mode of operation or that the machine is reading data. You will learn about other characters which may appear here in later lessons.

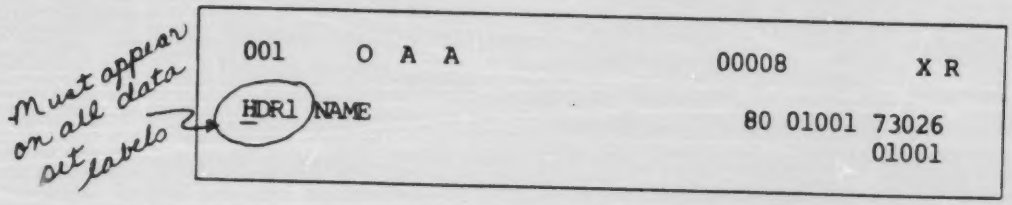


Between the Disk 1 sector address and the Machine Mode Indicator is a space for the Disk 2 Sector Address. If someone is working at the other station, the address of the record they are working on may appear here.

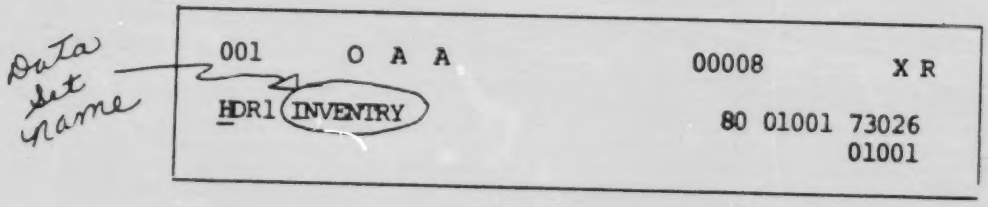
The next position is the Machine Status Indicator. An R in this position tells you the machine is ready. Always look for an R in this position before you remove your diskette from the machine. An N in this position means Not Ready and a W means Wait. If an R is not present when you open the disk drive door, a warning buzzer will sound.



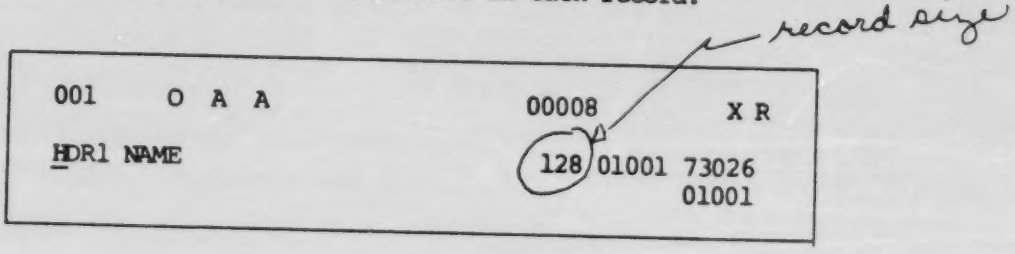
Let's now look at the next line on the data set label. The first field reads "HDR1." This is a designation that stands for the word "Header." You do not need to know anymore about this field on the data set label except that it must appear on each data set label.



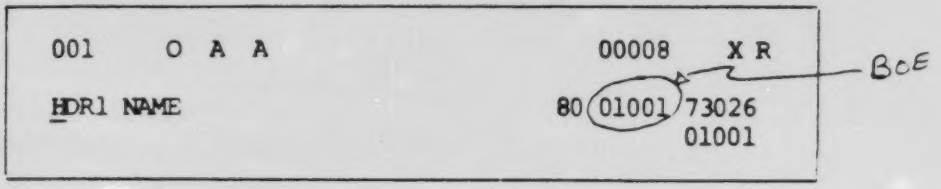
Each data set must be given a name. This enables the machine which reads the information from the diskette into the computer to easily find the data set. The name given to the data set is usually descriptive of what is contained in the data set. The name must not be more than 8 characters long. You may have to do some inventive abbreviating if the name you wish to give the data set is long. As an example, if you had a data set that contained information about the inventory, you might abbreviate it as "Inventry", since the word "inventory" has 9 letters.



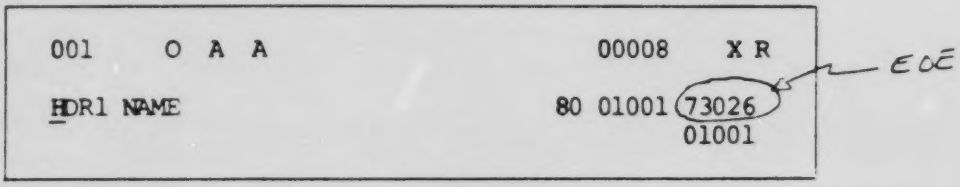
In cursor positions 025, 026, and 027, the record size is indicated. In the display below you will note that the record size has increased from 080 to 128. This is because some IBM 3742's will allow you up to 128 characters or spaces on a record. Some machines will only allow for 80 characters. You will learn in the next lesson how to modify your data set label so that you may input 128 characters on each record.



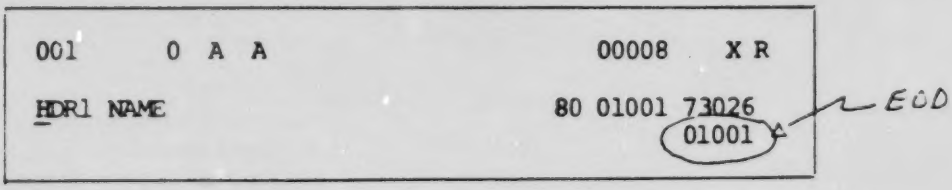
The next field is called the Beginning of Extent, or BOE for short. It tells where the first record on the data set is located. In this data set, BOE is located on track 01, in sector 01.



The next field is called the End of Extent, or EOE for short. It tells you where the last record on the data set is located. In this example, it is located on Track 73, in sector 26. At the present time, this diskette is set up to only contain one data set because all the record spaces have been accounted for.



Finally, let's look just below the EOE field. The numbers here are called the End of Data, or EOD for short. The EOD field is a counter field. It keeps track for you of the record position of the next available record space within yourdata set. When you first key information into the data set, this number must be set to match the BOE number. Then, each time that you key a record, the EOD will advance by one number. You won't be able to see this until you have keyed some information into the machine.



You have now learned about the most important fields on the data set label. Take the Self-Test on Lesson 2 before you proceed to Lesson 3.

Self-Test Lesson 2
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Indicate whether the below statements are TRUE or FALSE.

_____1. The diskette may be used over and over again.

_____2. Pencils, pens, and paper clips may be placed in the diskette jacket with the diskette.

_____3. A diskette has 75 circular tracks.

_____4. You may write on the diskette label only with a felt-tip pen.

_____5. The diskette should be inserted into the drive unit with the paper label away from you.

_____6. CHAR ADV will move the cursor backwards.

_____7. To correct a numeric error, depress NUMERIC SHIFT and the RESET key.

_____8. The Machine Mode Indicator "X" indicates that you are in the index mode.

_____9. The number 128 in the record size field indicates that you may record 128 records on the diskette.

DIRECTIONS. Insert the correct word(s) in the spaces provided below. A vocabulary list is provided.

10. Each track on the diskette is divided into ___ sectors.

11. A _____ is a group of related records, such as payroll records.

12. Data Set Labels are written on track number ___ which is called the _____.

13. The _____ is an underline mark that moves across the screen as you type.

14. To correct a flashing alphabetic error, simply depress _____.

15. The status indicator "R" indicates that the machine is _____.

16. Data Set Names can contain no more than __ characters/numbers.

26	CURSOR
8	00
READY	DATA SET
RESET	INDEX TRACK

Self-Test Lesson 2
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Indicate whether the below statements are TRUE or FALSE.

TRUE 1. The diskette may be used over and over again.

FALSE 2. Pencils, pens, and paper clips may be placed in the diskette jacket with the diskette.

TRUE 3. A diskette has 75 circular tracks.

TRUE 4. You may write on the diskette label only with a felt-tip pen.

FALSE 5. The diskette should be inserted into the drive unit with the paper label away from you.

FALSE 6. CHAR ADV will move the cursor backwards.

TRUE 7. To correct a numeric error, depress NUMERIC SHIFT and the RESET key.

TRUE 8. The Machine Mode Indicator "X" indicates that you are in the index mode.

FALSE 9. The number 128 in the record size field indicates that you may record 128 records on the diskette.

DIRECTIONS. Insert the correct word(s) in the spaces provided below. A vocabulary list is provided.

10. Each track on the diskette is divided into 26 sectors.

11. A Data Set is a group of related records, such as payroll records.

12. Data Set Labels are written on track number 00 which is called the Index Track.

13. The Cursor is an underline mark that moves across the screen as you type.

14. To correct a flashing alphabetic error, simply depress RESET.

15. The status indicator "R" indicates that the machine is READY.

16. Data Set Names can contain no more than 8 characters/numbers.

26	CURSOR
8	00
READY	DATA SET
RESET	INDEX TRACK

DIRECTIONS: Below is a Data Set Label. Match each of the follow Data Set Label parts.

001			0	A	A			00008		X	R
HDR1	PAYROLL							128	01001	03026	
										01014	

_____17.	Data Set Name	a.	01001
_____18.	Header	b.	X
_____19.	Status Indicator	c.	001
_____20.	BOE	d.	HDR1
_____21.	EOD	e.	03026
_____22.	Machine Mode Indicator	f.	Payroll
_____23.	Cursor Position	g.	R
_____24.	EOE	h.	01014
_____25.	Record Size	i.	128

DIRECTIONS: Below is a Data Set Label. Match each of the follow Data Set Label parts.

| | | |

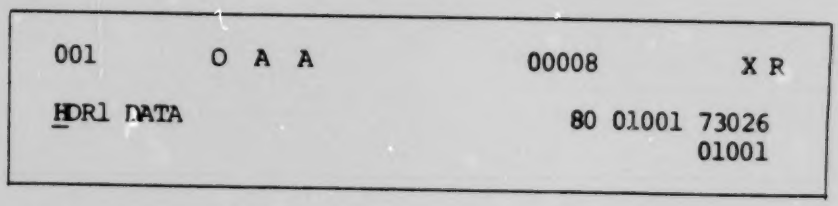
Lesson 3 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to

1. Record Advance and Record Backspace
2. Write a data set label (rename and modify a data set label)
3. Use the REP (Repeat) key
4. Define the following terms
   a. Beginning of Extent
   b. End of Extent
   c. End of Data
   d. Function Select Lower and Function Select Upper

Turn on the power and insert your diskette into the machine. Wait for the machine to finish loading. In the last lesson, you learned the meaning of the various fields on the data set label. In this lesson, you will learn to re-name and modify data set labels.

The display on your display unit screen should look similar to this if you have a new diskette:



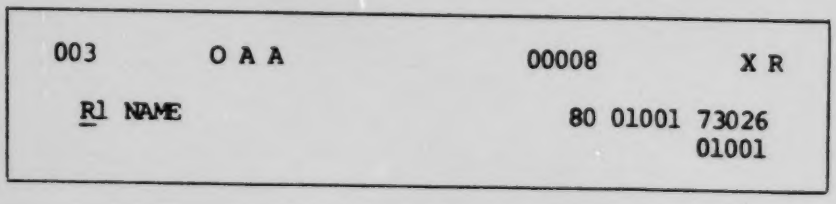
If the screen is flashing, reset by depressing NUMSHIFT and RESET.

Depress the spacebar once and watch what happens to the letter in position 001.

Did it erase? Depress your spacebar once again. Did the next letter erase?

Note the position of the underscore mark. Do you remember from Lesson 2 that this is called a cursor? Do you see that it is now under the R.

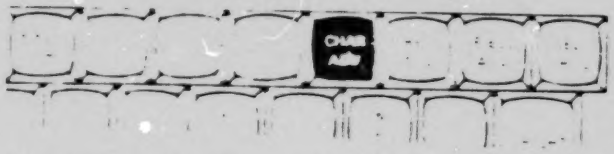
Look at your position indicator number. Does it read 003?



You have learned that if you use the spacebar to move across a line, you may erase characters in the path of the cursor. Can you think of the key to depress which would allow you to move across the page without erasing?

Did you say the CHARacter and ADVance key?

Find the CHARacter ADVance key on the top row of keys to the right of the keyboard. Depress it once. Now depress it again.



Did the R and 1 erase? No, they did not. You have learned that you should use the CHAR ADV key to move the cursor across a line that has already been typed when you do not want to erase.

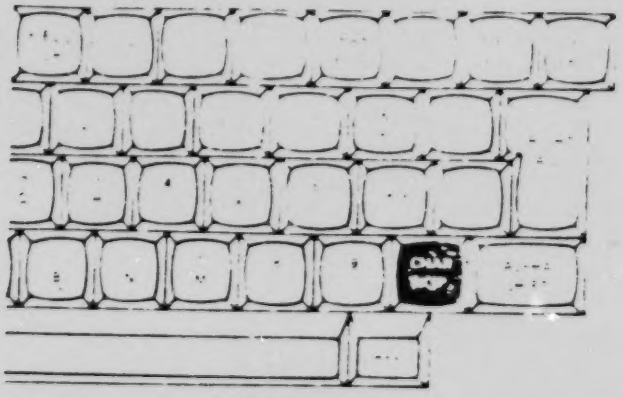
Let's experiment further. Find the key labeled REP beside the spacebar. REP stands for the word "Repeat." Depress the CHAR ADV key with your right hand and the REP key with your left hand, count to 3 and then stop. Do this now.

Did the cursor move quickly across the page? The REP key makes any other key have a repeat capability.

Look at the position indicator. The position indicator tells you the number position of the next character space.

Now find the CHARacter BacKSPace key and hold it down while you depress the REPEAT key. Move the cursor back to 001.

Character Backspace



You will now learn how to write and record a data set label. The cursor should be in position 001.

The first 4 positions on the data set label for the 3741 or 3742 are always HDR1. You will have to hold down the numeric shift key to type the 1. The number keys are on the right side of the keyboard. Type HDR, the number one, and the space which follows.

Type your first name. If your first name has more than 8 characters, only type the first 8 characters.

Now move the cursor to position 025 using your CHARacter ADVance key.

```
025          0 A A                    00008          X R

HDR1 YOUR NAME                         128 01001 01026
                                                 01001
```

In positions 025, 026, and 027, you will tell the machine the maximum number of characters that are to appear on each record. Some machines will only allow you to type 80 characters on each record, but the machine on which you are working will allow you to type up to 128 characters on each record. Hold down the numeric shift key and type the number "128" in spaces 025, 026, and 027, then tap your spacebar.

The next two fields define the extent of the data set; that is, where the data set begins and how far it extends (where it ends).

The first 5 digits tell the machine the location of the first record in a data set. This is called the Beginning of Extent, or BOE. The first record space that is available on a diskette is track 01, sector 01. Do you remember that this is written 01001?

Hold down the NUMeric SHIFT key and type Ø1ØØ1 and then a space. What's this strange character, Ø? It is a zero as computer programmers write it. They write it this way so that you will not confuse it with the letter O. The zero is on the spacebar or on the diagonal (/) key, depending on the keyboard structure of your particular machine. Do not attempt to type a zero with a slash mark.

```
029          0 A A                    00008          X R

HDR1                                   128 01001 73026
                                                 73026
```

Beginning in cursor position 035, there are 5 more digits. These numbers tell the machine the location of the last record space in a data set. This is called the End of Extent, or EOE for short. You will allow space for 26 records in the first data set. In other words, you will use up all of Track 01. Type 01026 beginning in cursor position 035.

```
035     0 A A                    00008          X R
HDR1 YOUR NAME                   128 01001 01026
                                           01001
```

EOE

Now, depress the CHAR ADV key and the REPEAT key to move the cursor to position 075. The 5 digits which appear here are called the End of Data, or EOD for short. The EOD acts as a counter. Each time you depress the RECORD ADVance key, the EOD counter will register. You will want the counter to begin counting with the first record in the data set, so type 01001 in spaces 075 to 079.

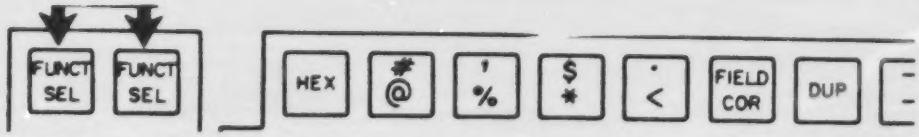
```
075     0 A A                    00008          X R
HDR1 YOUR NAME                   128 01001 01026
                                           01001
```

EOD

There are other pieces of information that you could put on data set label, but we will not study them now.

You will now learn to record the modified data set label.

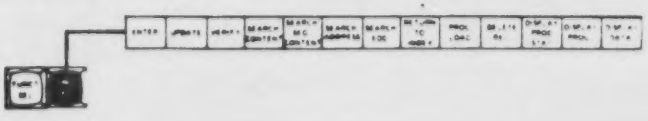
Find the two buttons labeled FUNCT SEL. FUNCT SEL stands for the words "Function Select."



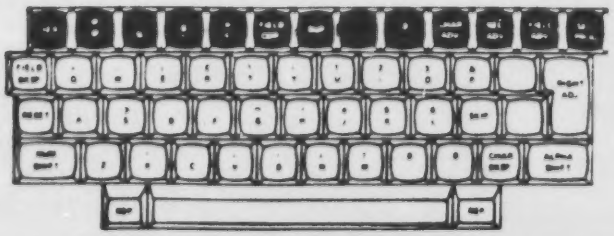
The Function Select keys are used to enable the top row of keys on the keyboard to perform functions other than those that are printed on them. The right hand FUNCTion SELect key is called the Function Select Lower key because it causes the top row of keys to perform the functions printed on the lower line above the keyboard.

Function Select Lower

FUNCT SEL lower makes it possible to use these functions:

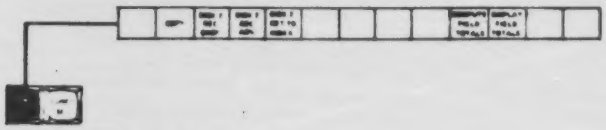


by pressing these keys:



The left FUNCTion SELect key is called the Function Select Upper key because it enables the top row of keys to perform the functions printed on the top line above the keyboard.

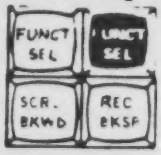
FUNCT SEL upper makes it possible to use these functions:



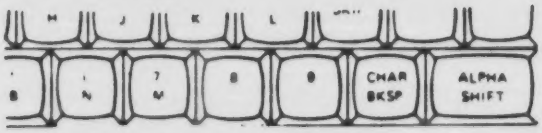
Tap the FUNCTion SELect Lower key.

The FUNCTion SELect Lower key also allows the letter M key to perform an extra function, called MODIFY. If you want to change your data set label, you must depress FUNCTion SELect Lower, then the letter M key for MODIFY, then RECord ADVance.

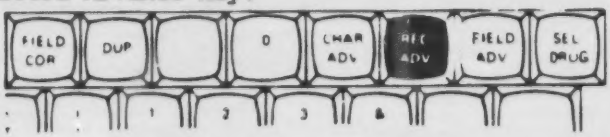
Depress the FUNCTion SELect Lower key now.



Now tap the letter M key.



Now tap the RECord ADVance key.



The screen should flash and the revised data set label should appear in the display unit window. The display should look like this:

```
001        O A A                    00008          X R

HDR1 YOUR NAME                       128 01001 01026
                                               01001
```

If your display does not look the same, review the lesson and try again.

If you still are unable to record the revised data set label, check with your instructor or the lab para-professional.

You will now type a second data set label.

Depress the RECord ADVance key.

Is your screen flashing? If the screen is flashing, depress the NUMeric SHIFT key and then tap the RESET key.

The second data set label will be recorded in track 00, sector 09 (00009). This means that the read-write head has moved to the next sector on the Index Track. Look in the display window and see. Does it say 00009?

```
001        0 A A                    00009              X R

HDR1 NAME                                  80 01001 73026
                                                    01001
```

You will now type a second data set label.

Type HDR1 in spaces 001 to 004, then type a space.

Now type up to 8 characters of your last name.

Now space over the cursor position 025 and type 128 for the record length, then type a space.

You will include all record spaces of the second track in this data set. Type 02001 and then a space. Do you remember that this is called the Beginning of Extent?

Now type 02026 beginning in space 035. This is your End of Extent.

```
001        0 A A                    00009              X R

HDR1 LASTNAME                        128 02001 02026
                                                    73026
```

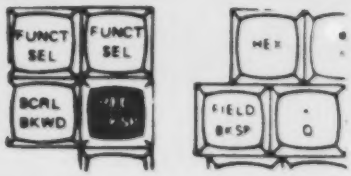
Now CHARacter ADVance to cursor position 075. Key 02001 because you want the machine to start counting with the first record in the second data set.

Now tap FUNCTion SELect Lower, M, and then RECord ADVance.

Your second data set label should look like this:

```
001        O A A                              00009     X R

HDR1 LASTNAME                          128 02001 02026
                                               02001
```

Now look below the FUNCTion SELect Lower key and find the RECORD BACKSPACE key (REC BKSP). The Record Backspace key is used to move backward along a track.



Depress it once.

The first data set label you typed should now appear in the display unit window.

When you have taken the Self Test, you have completed Lesson 3.

SELF-TEST LESSON 3
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the sentences below.

1. The _____ key allows you to move across a line of data without erasing.

2. The _____ key makes any other key have a repeat capability.

3. To change or modify a data set label involves depressing three keys in sequence, they are: _____ key, ____, and _____.

4. The _____ key allows you to move backwards across a line of data without erasing.

DIRECTIONS. Below is a data set label. In the blanks below, insert the proper data that should be placed in the corresponding positions.

001	0 A A	00008	X R
HDR1 INVENTRY		128 01001	73026 01026

001-004 _____

005-012 _____

025-027 _____

028-033 _____

035-039 _____

075-079 _____

SELF-TEST LESSON 3
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the sentences below.

1. The CHARacter ADVance key allows you to move across a line of data without erasing.

2. The REPeat key makes any other key have a repeat capability.

3. To change or modify a data set label involves depressing three keys in sequence, they are: FUNCTion SELect Lower key, M, and RECord ADVance.

4. The CHARacter BacKSPace key allows you to move backwards across a line of data without erasing.

DIRECTIONS. Below is a data set label. In the blanks below, insert the proper data that should be placed in the corresponding positions.

001-004	HDR1
005-012	INVENTRY
025-027	128
028-033	01001
035-039	73026
075-079	01026

Lesson 4 - THE IBM 3741/3742 DATA ENTRY STATION

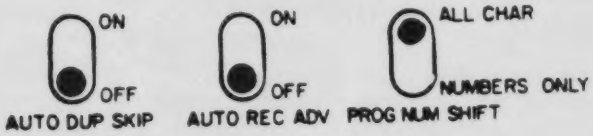
When you have completed this lesson, you will be able to

1. Record records on a diskette.
2. Alter records that you have recorded.
3. Use the Scroll Forward and Scroll Backward keys.

Turn on the machine and insert your diskette.

Check the display unit window to see that the data set is 00008. If it is not, RECORD BACKSPACE or RECORD ADVANCE until 00008 appears. If the screen flashes as you RECORD ADVANCE or RECORD BACKSPACE, simply reset the error by depressing NUMSHIFT and RESET and then continue advancing or backspacing until you find the correct data set number (00008).

Look at the three switches that are above the keyboard. You will learn what they mean later.



Put the Auto Dup/Skip switch in the off position.

Put the Auto Rec/Adv switch in the off position.

Put the Prog Num Shift switch in the ALL CHAR position.

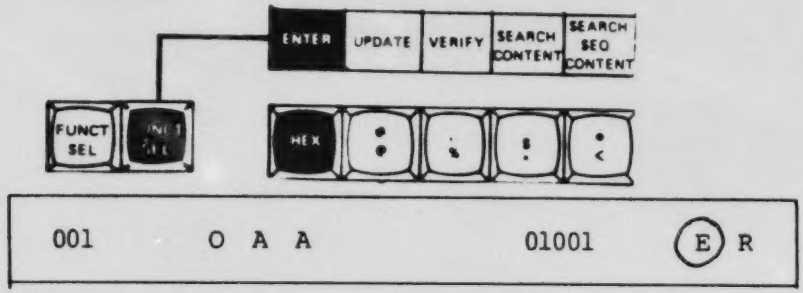
Now look to the left and find the two FUNCTion SELect keys. By depressing the FUNCTion SELect keys, you can cause the top row of keys to perform additional functions.

There are two lines of additional functions imprinted above the top row of keys. The left FUNCTion SELect key causes the top row of keys to do the functions printed on the top line above the keyboard instead of what is printed on them. The left FUNCTion SELect button is called the FUNCTion SELect Upper key because it controls the upper line of special functions.

Lesson 4

Now look below the Upper line and find the line which begins with the word "ENTER." The right FUNCTion SELect key makes the top row of keys perform the special functions on the lower line. The right FUNCTion SELect key is called the FUNCTion SELect Lower key.

Depress FUNCTion SELect Lower and the key labeled HEX. You are now in the ENTER MODE. Look at your display. Do you notice that an E appears where the X used to be in the status line.



Do you notice the number 01001 in the upper part of the window? This tells you that the Read-Write head has moved to Track 01, sector 01—the first record in data set 00008 will be recorded here!

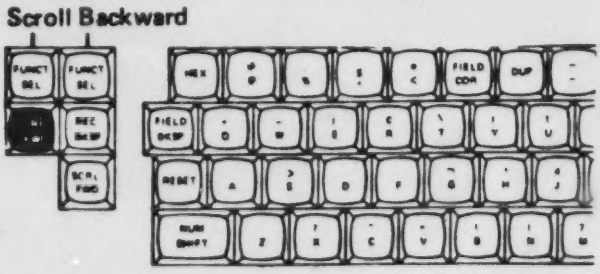
Now type the following sentence, just as it is written. Leave two spaces after the periods. Remember to depress the NUMeric SHIFT key on the lower left side of the keyboard when you type numbers.

PRACTICE EXERCISE

THE IBM 3742 IS EASY TO OPERATE. I AM GOING TO LEARN HOW TO USE IT WELL. THIS IS THE FIRST RECORD THAT I HAVE KEYED.

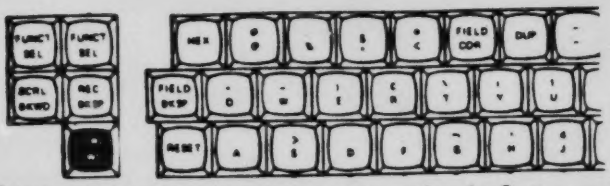
Look at the screen. The first part of the record has disappeared! No, it has not. The display unit window can only show 80 characters at a time.

Look below the FUNCTion SELect Upper key and find the key labeled SCRL BKWD. This stands for the phrase "Scroll Backward." Tap it once. You should now see the beginning of the record.



Lesson 4

Now look below the RECORD BACKSPACE key and find the key labeled SCRL FWD. This stands for the phrase "Scroll Forward." Tap it once to see the end of the record.



You will now learn to correct errors you make before you record the information onto the diskette. Use your Character Backspace key to move to the "w" in the word "well" in the first sentence.

Type the word "fast". As you type, you will see that the characters you originally typed are erased as the new characters appear.

Proofread the record to make sure there are no errors. If you find an error, use your CHARACTER BACKSPACE or CHARACTER ADVANCE key to move to the point of the error, and then type the correct letter or letters over the top of the error.

Depress the RECORD ADVANCE key once.

You have now recorded a record in track 01, sector 01. The screen should be blank except for the status line. The record address on the status line should be 01002. You are now ready to record the second record.

Key in the following, exactly as it is shown:

PRACTICE EXERCISE

THIS IS THE SECOND RECORD IN DATA SET 00008. WHEN I FINISH KEYING THIS SENTENCE, I WILL DEPRESS RECORD ADVANCE TO RECORD.

Depress RECORD ADVANCE now. Your screen should be blank except for the status line. The record address at the upper right should be 01003.

Now tap the RECORD BACKSPACE Key once. You are now back at 01002, the second record you recorded. Look at the machine mode indicator at the upper right. Do you see a U where the E was before?

update mode

001	O	A	A		01002	(U) R

Whenever you RECORD BACKSPACE as you are entering, the machine changes to the UPDATE mode of operation. This means that you can change the information that you have entered.

Lesson 4

Type the following sentence in record address 01002 over the top of what you recorded before.

PRACTICE EXERCISE

I AM NOW GOING TO CHANGE RECORD 01002 BY RETYPING OVER THE TOP OF WHAT I TYPED BEFORE.

You still have some characters left from the first time you typed because this sentence takes up 87 character spaces and the first sentence took up 118 character spaces.

Tap your spacebar to erase the remaining characters.

Now depress RECORD ADVANCE.

Depress RECORD BACKSPACE. Do you see that 01002 has been changed (updated)?

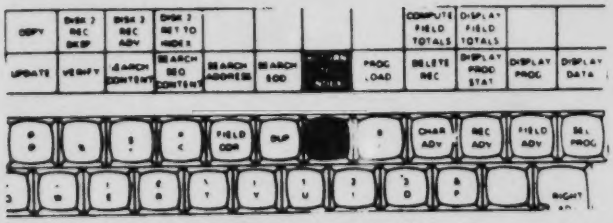
Whenever you remove your diskette from the machine, the READ-WRITE head must be at the INDEX TRACK. If it is not, an alarm buzzer will sound.

Open the disk drive door and then close it. The buzzer should sound.

Depress NUMSHIFT and RESET.

You now know <u>what</u> happens, but how do you return the READ-WRITE head to the Index track.

Look above the hyphen key on the top row and find the place marked RETURN TO INDEX. Do you remember how to make the top row of keys take on additional functions?



Depress the FUNCTION-SELECT LOWER key and then depress the RETURN TO INDEX KEY (the hyphen).

You have now returned to the Index track. Your data set label should be 00008. You have keyed two records into this data set. Look at the EOD counter. What does it say? It should read 01003. It tells you that the next available record space is in track 01, sector 03.

When you complete the Self-Test, you have finished Lesson 4.

SELF-TEST LESSON 4
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the spaces below.

1. The _____ key controls the upper line of special functions.

2. Depressing the FUNCTion SELect Lower key and _____ key will place the machine in the ENTER mode.

3. The display window can show only ___ characters at a time.

4. If you are in position 118 and would like to look back at something at position 14, you must depress the _____ key.

5. Whenever you remove the diskette from the machine, the READ-WRITE head must be at the _____ _____.

6. Should you open the drive door in the ENTER mode a buzzer should sound. To correct this you must depress _____ and _____.

SELF-TEST LESSON 4
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the spaces below.

1. The FUNCTion SELect Upper key controls the upper line of special functions.

2. Depressing the FUNCTion SELect Lower key and HEX key will place the machine in the ENTER mode.

3. The display window can show only 80 characters at a time.

4. If you are in position 118 and would like to look back at something at position 14, you must depress the SCRL BKWD key.

5. Whenever you remove the diskette from the machine, the READ-WRITE head must be at the INDEX TRACK.

6. Should you open the drive door in the ENTER mode a buzzer should sound. To correct this you must depress NUMSHIFT and RESET.

Lesson 5 - The IBM 3741/3742 Data Entry Station

When you have completed this lesson, you will be able to

1. Key records from a source document
2. Use the Search EOD function of the machine
3. Use the Update mode of operation.
4. Use the Search Address function of the machine.

Turn on the machine and insert your diskette.

Check the switches to make sure the Auto Rec Adv and the Auto Dup/Skip switches are off.

In this lesson, you will key information into data set 00009. If the screen flashes, depress NUMSHIPT and RESET then check your data set label to make sure all the required fields are correct. If they are not correct, modify your data set label according to the directions given in Lesson 3.

Depress FUNCTion SElect Lower and ENTER.

Look at the Practice Exercise source document on page 5-5.

You will key each record acording to the record number which appears at the left. Use the spacebar to move past any blank spaces. Notice that there is no blank space between the last digit in the student number and the first number in the street address. It is common practice in data processing to key information with no spaces between fields. In this way, more information can be keyed into a record. The computer programer can instruct the computer to leave spaces in the output, even though there were no spaces left in the input.

After you have typed each record, depress RECord ADVance to record it.

Begin keying the records now.

You should now have entered 10 records in data set 00009. Depress RECord BacKSPace to look at each record. If you notice any mistakes, re-key the record and depress RECord ADVance to update the record. If you do not remember to depress RECord ADVance, the change will not be recorded!

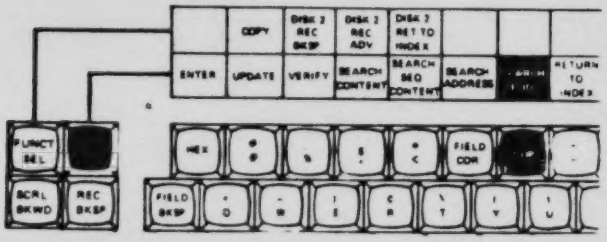
When you have checked all of the records for accuracy, depress FUNCTION SELECT LOWER and RETURN TO INDEX.

Look at your EOD. Does it read 02011? Do you know what this tells you?

It tells you that in Data Set 00009, the next available record space is 02011.

Now find the space marked SEARCH EOD on the lower line above the top row of keys. You can use this special function key to quickly find the last record in a data set.

Search End of Data



Depress FUNCTION SELECT LOWER and then press SEARCH EOD. When the search is completed, the machine will display the last record in the data set and the machine will be in the UPDATE mode. Look at the machine status position in the status line. Do you see the U?

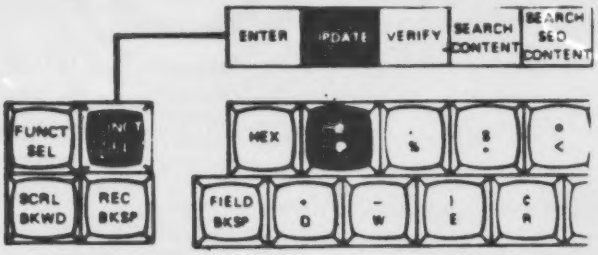
001	0 A A	02010	U R

Depress RECORD ADVANCE.

The machine should now be in the ENTER mode. You could key additional records into the Data Set if you needed to.

Depress FUNCTION SELECT Lower and RETURN TO INDEX.

Now depress FUNCTION SELECT Lower and then depress the UPDATE key. It is on the lower line above the top row of keys, beside ENTER. Your display unit should now show the first record in the data set.



The UPDATE function can be used if you want to "flip" through the data set and change or proofread records.

Depress RECORD ADVANCE to look at the second record. Notice that the machine is still in the UPDATE mode. Keep pressing RECord ADVance until you have looked at all your records again.

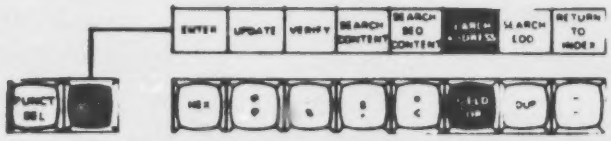
A word of warning: Once you RETURN TO INDEX, if you depress FUNCTION SELECT LOWER and ENTER, the machine will erase from the screen any previously keyed records on a given data set.

FUNCTION SELECT and RETURN TO INDEX.

Suppose you now learn that Brantley Filo's address has changed. Brantley recently moved to 82 Ribbon Circle. You could select the UPDATE mode and then RECORD ADVANCE to this record address, but let's experiment some more.

Find the special function key on the lower line marked SEARCH ADDRESS.

Follow these directions exactly.



Press FUNCTION SELECT Lower and then press SEARCH ADDRESS. The screen will go blank.

Now key in Brantley's record address, which is 02005. You do not have to depress NUMSHIFT when keying this number.

Press RECORD ADVANCE to start the search.

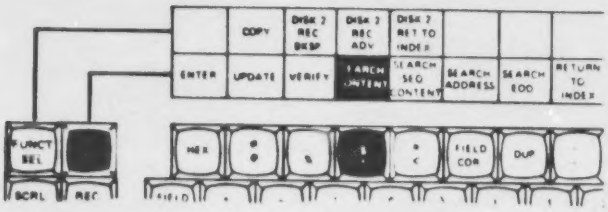
The display unit window should now show Brantley's record. The machine is in the UPDATE mode, so change Brantley's street address to 82 Ribbon Circle. Remember to RECORD ADVANCE after you have typed the change so that the change is recorded.

RETURN TO INDEX (FUNCTion SELect Lower and RETURN TO INDEX).

Let's try one more experiment. Suppose that you do not know the record address for a particular record, but that you know some of the information that is on the record. Let's try another experiment. This time, we will use the SEARCH CONTENT function.

Look at the lower line and find the SEARCH CONTENT key.

Press FUNCTION SELECT LOWER and SEARCH CONTENT.



A previously keyed record might appear; if so, press FUNCTION SELECT LOWER and DELETE RECORD.

Key in "Barney Oldfield," beginning in cursor position 001. You could key in all of the record you are searching for, but it is not necessary to do so.

Press RECORD ADVANCE to start the search. The search will stop when a record containing the data you keyed is found. When the search stops, the machine is in UPDATE (U) mode.

Change Mr. Oldfield's student number of 854628837.

Press RECORD ADVANCE

Press FUNCTION SELECT Lower and RETURN TO INDEX.

When you complete the Self Test, you have completed Lesson 5.

IBM

PROGRAM		PUNCHING INSTRUCTIONS	GRAPHIC							
PROGRAMMER	DATE		PUNCH							

	Name (1-19)	Student No. (20-28)	Street Address (29-45)	City and State (47-65)
Record 02001	MARY J MORRIS	175683432 17	LONG LEAF LANE	SKOKIE ILLINOIS
02002	JOHN P JONES	384097615837	GERANIUM ROAD	TAMPA FLORIDA
02003	PARKER P PRIOLA	571623956934 12	JANIS DRIVE	VERDUN OHIO
02004	MANUAL VESQUEZ	163427941 18	LAMBERT PLACE	JOPLIN MISSOURI
02005	BRANTLEY FILO	828384477954	GREADLEY ST	JACKSON MISSISSIPPI
02006	BARNEY OLDFIELD	954628837704	HOUSER STREET	ST PAUL MISSOURI
02007	JANET PARKER	3794869829 3	JESSUP ROAD	CINCINNATI OHIO
02008	THOMAS PINCKNEY	818468585 17	PERLMAN WAY	AKRON OHIO
02009	GERALD PHIPPS	818349761404 2	BIG BEN ROAD	ALTA PENNSYLVANIA
02010	TRURO THOMAS	963758432192 5	GOLDEN ROAD	JEREMY LOUISIANA

*A standard form, IBM electro #88157, is available for punching statements from this form.

Self-Test Lesson 5
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. The below statements are either TRUE or FALSE. Circle the correct answer.

T F 1. It is a common practice in data processing to key information with at least five spaces between fields.

T F 2. The computer programmer can instruct the computer to leave spaces in the output, even though there were no spaces left in the input.

T F 3. When reviewing data that has been entered, if you notice any mistakes re-key the record and depress RECord ADVance to update the record.

DIRECTIONS. In the space provided, insert the correct word(s) that best completes the statement. A vocabulary list is provided below.

4. To quickly find the last record in a data set depress FUNCTion SELect Lower and _____.

5. The machine will erase from the screen any previously keyed records on a given data set, if you depress FUNCTion SELect Lower and _____.

6. If you want to "flip" through the data set and change or proofread records, depress FUNCTion SELect Lower and _____.

7. If you do not know the record address for a particular record, but you know some of the information that is on the record you can find the record by keying in part of the record and depressing FUNCTion SELect Lower and _____.

UPDATE
ENTER
SEARCH CONTENT
SEARCH EOD

Self-Test Lesson 5
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. The below statements are either TRUE or FALSE. Circle the correct answer.

T (F) 1. It is a common practice in data processing to key information with at least five spaces between fields.

(T) F 2. The computer programmer can instruct the computer to leave spaces in the output, even though there were no spaces left in the input.

(T) F 3. When reviewing data that has been entered, if you notice any mistakes re-key the record and depress RECord ADVance to update the record.

DIRECTIONS. In the space provided, insert the correct word(s) that best completes the statement. A vocabulary list is provided below.

4. To quickly find the last record in a data set depress FUNCTion SELect Lower and SEARCH EOD .

5. The machine will erase from the screen any previously keyed records on a given data set, if you depress FUNCTion SELect Lower and ENTER .

6. If you want to "flip" through the data set and change or proofread records, depress FUNCTion SELect Lower and UPDATE .

7. If you do not know the record address for a particular record, but you know some of the information that is on the record you can find the record by keying in part of the record and depressing FUNCTion SELect Lower and SEARCH CONTENT .

UPDATE
ENTER
SEARCH CONTENT
SEARCH EOD

Lesson 6 - THE IBM 3741/3742 DATA ENTRY MACHINE

When you have completed this lesson, you will be able to

1. Enter a program on the 3741/3742
2. Use the SKIP key
3. Use the automatic RECord ADVance feature of the machine
4. Define the following terms
   a. Begin Field Code
   b. Continue Field Code

Turn on the machine and insert your diskette. Depress RECord ADVance until you get to Data Set 00010. The screen may be flashing. If the screen is flashing, depress NUM SHIFT and RESET.

Do you remember how to write and modify a data set label?

Type HDR1 in positions 001 to 004, then type a space.

Type the phrase "Job1" in spaces 006 to 009 (do not type a space between Job and 1 and do not type the quote marks).

The data in Job 1 will only have 80 characters. Advance the cursor to position 026 and type 80, then type a space. If "128" appeared in the data set before you began modifying it, use the spacebar to erase the "1" in position 025.

The last record address in Data Set 00009 was track 02, sector 26. This means that the first record in Data Set 00010 must be in track 03, sector 01 (the BOE for this data set is 03001). Type 03001 in positions 029 to 033 and then type a space. This data set will contain 30 records. How many records can be typed on track 03?

Did you say 26? If you did, you are correct. This means that you will still have 4 records which must be recorded. These records will go in track 04.

Type 04004 in spaces 035 to 039 (the EOE is 04004).

Now CHARacter ADVance to position 075. Do you know what to type here?

You should type 03001. This will set the EOD counter at the first record address in the data set.

Depress FUNCTion SELect Lower.

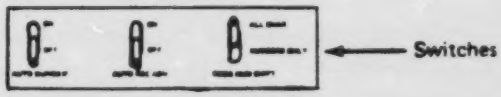
Now press the letter "M" for Modify.

Now press RECord ADVance.

The display in your window should look like this:

```
001        0  A  A                    00010          X R

HDR1 JOB1                             80  03001 04004
                                              03001
```

Make sure the AUTOmatic DUPlicate/SKIP and AUTOmatic RECord ADVance switches are in the Off position. Make sure your PROGram NUMeric SHIFT switch is in the ALL CHARacters position.



Look at the Practice Exercise source document. In this job, you will key customer billing information.

In the first field, you will key the customer names (cursor positions 001-020). In the second field, you will type the customer street addresses (cursor positions 021-040). In the third field, you will key the customer city and state (cursor positions 041-067). In the fourth field, you will enter the zip codes (cursor positions 068-072). In the fifth field, you will key the amounts owed (cursor positions 073-079).

By using the Program feature of the machine, you can tell the machine where each field begins and then you may use the SKIP key to move past blank spaces. The SKIP key functions like the tabulator on a typewriter.

The program for the data set that you will key will look like this:

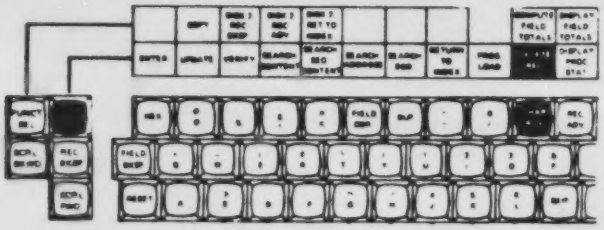
```
(001)                                   (021)
  A . . . . . . . . . . . . . . . . . . . A . . . . . . . . . . . . .
            (041)
  . . . . . . A. . . . . . . . . . . . . . . . . . . . . . . . . . . .

(068)       (073)         (080)
  N - - - -   N - - - - - - E
```

The letters A and N are called Begin Field Codes. The A tells the machine that the first letter in the field is an alphabetic (alpha) character. The N tells the machine that the first character in the field is a number (it is numeric). When an A appears, the machine will be in Alpha shift. This means that the letters (or lower case characters) will type when the key is struck. When an N appears, the machine will be in Numeric Shift. This means that the numbers may be typed without Numeric Shift key depression.

The periods and hyphens are called Continue Field Codes. Continue Field Codes tell the machine that the information which appears after the Begin Field Code belongs with that Begin Field Code. A period tells the machine that it should be in Alpha Shift, and a hyphen tells the machine that it should be in numeric shift.

Now follow these directions exactly:

Depress FUNCTion SELect Lower and DELete RECord. This will blank the display unit screen, but it will not delete the data set label on the index track.



Now type the letter A in position 001, then type 19 periods.

Your position indicator should now read 021.

Type another A and 19 more periods.

The cursor position indicator should not read 041

Type the letter A and then type periods until the cursor position indicator reads 068.

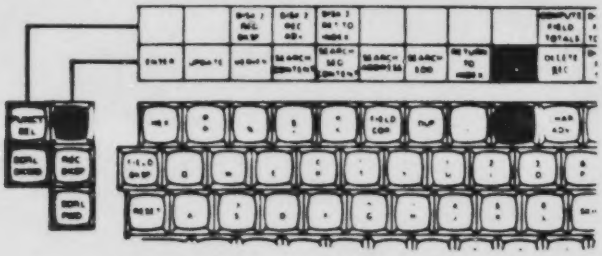
Type the letter N and four hyphens.

Now type the letter N in position 073 and six hyphens.

Type an E in position 080. The E tells the machine that your program is Ended.

You will now store the program into one of the program storage areas of the machine.

Find the special function key which reads "PROG LOAD." This stands for PROGram LOAD.



Depress FUNCTion SELect Lower and PROGram LOAD.

Now, find the number 1 key on the keyboard and tap it once. It is possible to store up to 10 programs in the machine at one time. You may store programs in the number 0-9 keys and also in the letter A key.

Now depress FUNCTion SELect Lower and RETurn TO INDEX.

Now select Enter (Depress FUNCTion SELect Lower and the ENTER key).

You will now tell the machine that you wish to use program 1. Find the key on the top row that is marked "SEL PROG." SEL PROG stands for the words "Select Program."

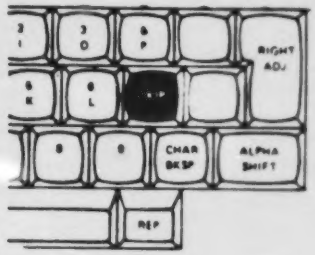
Depress SELect PROGRAM.

Now depress the number 1 key.

Look at the status line. Do you see the number 1 in the program number position? Do you also notice A A? The first A tells you that the Begin Field Code is alphabetic. The second A tells you that the Continue Field Code is also alphabetic.

You will now key the first record in this data set. Look at the Practice Exercise on page 6-6. Type the first name and then stop.

Now look at the right side of the keyboard and find the SKIP key. Tap it once and watch the cursor.



Did the cursor move to position 021?

You will have to depress the NUMeric SHIFT key to put the machine in the numeric shift for the street numbers.

Continue typing the first record. Use the SKIP key to move from field to field. Stop when you have typed the money amount, before you RECord ADVance.

Now find the switch labeled "AUTO REC ADV." This stands for Automatic Record Advance. Move the Automatic Record Advance switch to the On position and watch what happens.

Did the machine move to the next record address? It should have. The E in your program tells the machine to automatically advance to the next record space when the AUTOmatic RECord ADVance switch is turned on. Leave the AUTOmatic RECord ADVance switch on.

Key the second record. Stop when you get to the "Amount Due" field. Notice that the amount starts in cursor position 075. Since this is a Numeric field, you will have to depress your ALPHA SHIFT key and then the space bar to move to position 075. Otherwise zeroes may appear before your numbers in the amount due column.

Key the remaining records. You will no longer have to manually record advance. If the screen should start flashing, it means you have made an error. Press RESET and check to make sure your cursor is in the correct position. If you try to type an Alpha character in a Numeric field, for example, the machine will signal that you made an error.

When you have keyed all of the records, Return to Index and then answer the Self Test Questions. You have now completed Lesson 6.

PRACTICE EXERCISE

IBM FORTRAN Coding Form GX28 7327 6 U/M 050 Printed in U.S.A.

	COMPANY NAME (1-20)	STREET ADDRESS (21-40)	CITY + STATE (41-67)	ZIP CODE (68-72)	AMT. DUE (73-80)
1	PAULUS ASSOCIATES	85 PARKLANE SUITE 2	VILLANUS COLORADO	066060	8529735
2	PETERS MACHINE	1975 SOUTH BEADE RD	KENT OHIO	43600	97156
3	PFALZ & SONS	17354 SUNNET PARK	WARSAW INDIANA	46225	8457
4	BRIEUR BROTHERS INC	97612 TRELLIS STREET	MELTON FLORIDA	33023	456
5	FERNDALE STORES INC	3 CHURCH STREET	LOUISVILLE KENTUCKY	40208	8795410
6	REDDING FREIGHT	77 HICKOCK STREET	REDDING PENNSYLVANIA	19603	96154
7	BEATLEMAN'S OF BOSTO	92 PLEASANT DRIVE	BOSTON MASSACHUSETTS	02151	898546
8	WANOUS ENGINEERING	NO 1 INDUSTRIAL PKWY	KNOXVILLE TENNESSEE	37921	797658
9	MCMANUS COMPANY	8 MCMANUS STREET	ERIE PENNSYLVANIA	16506	654856
10	GOULD TRANSFER	563 GEMSTONE STREET	SAN DIEGO CALIFORNIA	92119	786545
11	JEREMY SIETZ MD	4 PHYSICIANS PLAZA	CANTON OHIO	44720	989775
12	MARTENS COMPANY	94 JOHN MARK EXPRESS	MARINA DEL REY CALIFORNIA	94015	345858
13	QUARLES ASSOCIATES	83 PETROVSKI STREET	BREVARD KENTUCKY	41014	199631
14	JASPER ADDLEBERGER &	762 JILLY LANE	SALEM MASSACHUSETTS	02148	559377
15	MYERS & MYERS	5415 DUNKING STREET	BREEZEWOOD PENNSYLVANIA	16601	88335
16	DOMINQUEZ VAN LINES	93 WHITE STONE ROAD	RENO NEVADA	89506	175461
17	D HILNE INCORPORATED	84762 NARRINGTON WAY	LINCOLN NEBRASKA	68521	815533
18	DAUCHERT & DAVIS	6 BEAVERBROOK	OMAHA NEBRASKA	68133	658664
19	MAZYCK & MAZYCK	33667 NORTH SOUTH ST	ST PETERSBURG FLORIDA	32508	336428
20	GAMBLE BROTHERS	72 WESTERN PINE STRE	MIAMI FLORIDA	33157	443472
21	THE TOY STORE	803 GIANT MALL	CANTON OHIO	44704	298888
22	CALENDULA ENTERPRISE	278 PELUS STREET	LAFOLLETTE TENNESSEE	38101	989437
23	ONYX & PEARLS	4 MAIN STREET	RALEIGH NORTH CAROLINA	27611	618115
24	DALLAS LANE INC	1553 GOVERNOR LANE	ATLANTA GEORGIA	30315	413241

Self-Test Lesson 6
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Match each of the below items.

____1. A

____2. Period (.)

____3. E

____4. SKIP

____5. Hyphen (-)

____6. N

a. Program End Code

b. Numeric Continue Fiel Code

c. Functions like the tabulator of a typewriter.

d. Numeric Field Code

e. Alpha Continue Field Code

f. Alphabetic Field Code

DIRECTIONS. Insert the correct word(s) in the space provided.

6. It is possible to store up to ___ programs.

7. You may store programs in the numbers _____ and also in the letter __ key.

8. To store a program into one of the program storage areas of the machine, depress FUNCTion SELect Lower, _____ and a number from 1-9 or A.

10
1-9
A
PROGRAM LOAD

Self-Test Lesson 6
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Match each of the below items.

f 1. A	a. Program End Code
e 2. Period (.)	b. Numeric Continue Field Code
a 3. E	c. Functions like the tabulator of a typewriter.
c 4. SKIP	d. Numeric Field Code
b 5. Hyphen (-)	e. Alpha Continue Field Code
d 6. N	f. Alphabetic Field Code

DIRECTIONS. Insert the correct word(s) in the space provided.

6. It is possible to store up to 10 programs.

7. You may store programs in the numbers 1-9 and also in the letter A key.

8. To store a program into one of the program storage areas of the machine, depress FUNCTion SELect Lower, PROGram LOAD and a number from 1-9 or A.

10
1-9
A
PROGRAM LOAD

Lesson 7 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to

1. Insert a record.
2. Delete a record.
3. Delete a data set.

Turn on the machine and insert your diskette.

Move to Data Set 00010 (Job 1).

Key the program that you used in lesson 6 (see page 6-2). Load it in Program Storage Area 1.

Sometimes you might decide that a record you have keyed previously should be deleted from a data set. You would want the computer to disregard this record.

Let's practice Record Deletion by deleting records from data set 00010.

Use the Search Address feature to move to record 03006.

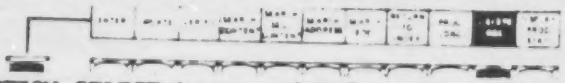
Do you remember how to do this?

Depress Function Select Lower and then tap Search Address.

Now type 03006.

Now tap Record Advance. Pretend that Redding Freight has paid its bill and you do not wish this record to appear in the data set.

Look above the top row of keys. Do you see the DELETE RECORD function?



Depress FUNCTION SELECT Lower and Delete Record.

The screen will flash and a D will appear instead of the R in "Redding".

This means that the record has been deleted.

Now Record Advance and repeat the deletion process for the next record.

Now Record Backspace to Record 03006. Do you notice that the screen is flashing? Whenever you have deleted a record and then move to that record position, the screen will flash to remind you that the record has been deleted. You must depress NUM SHIFT and RESET to stop the screen from flashing. You will be unable to Record Advance or Record Backspace until you have reset the error.

Return to Index!

You use the Record Insert feature to open up spaces (sectors) within a data set so records can be added. Space for up to 99 records can be created.

We used up all the available record spaces in Data Set 00010 during the exercise in Lesson 6, so we must modify the data set label. Modify the EOE to 04026. Move to cursor position 038 and type 26. Depress Function Select Lower, M, and Record Advance. This will allow space for 20 additional records. We will only add six additional records for this exercise, however.

Your data set label should look like this:

```
001       O A A                          00010    X R

HDR1 JOB1                          80 03001 04026
                                           03025
```

Suppose that you wanted the inserted records to appear after Myers & Myers. Use Search Content function to move to that record.

Do you remember how to do this?

Depress FUNCTION SELECT LOWER and SEARCH CONTENT.

Remember to depress Function Select Lower and Delete Record to clear the screen if a record appears when you press Function Select Lower and Search Content.

Now type "Myers & Myers."

Now Record Advance. Myers & Myers' record will be displayed.

The machine will move all remaining records, including the record currently being displayed toward the EOE.

Press FUNCTION SELECT Lower and SEARCH ADDRESS to start the insertion process.

Now type "06", which indicates the number of records you wish to insert.

Now find the key labeled "RIGHT ADJ." You will learn the meaning of this key later. For now, it is being used as a special function key.

Depress FUNCTION SELECT Lower and then the RIGHT ADJ key.

The machine mode will change to N (which means "Not Ready") and the status will change to W (which means "Wait").

When all the records have been moved, the spaces will be filled with deleted records. Any program you might have previously selected will be canceled. You must depresss NUM SHIFT and RESET before you key each new record you wish to insert.

Return to Index. Search for address 03015. The screen will flash. Reset! Select Program 1.

Key in the six additional records given in the Practice Exercise on page 7-4. You will have to reset before you enter each new record.

After you have keyed the six additional records, Return to Index.

Suppose that there is an entire data set which you wish to delete. How would you do this?

Record Backspace to Data set 00009.

Depress FUNCTION SELECT Lower.

Press M to select the Modify mode.

Now depress Delete Record.

Do you see a "D" in cursor position 001? This tells you the data set has been deleted.

Take your diskette to the computer lab in building 100 and ask the lab assistant to run you a copy of the data set labeled "JOB1". Check the output for errors. If you note any errors, make the corrections on your diskette and get another copy run in the computer lab.

When you answer the Self Test questions, you have completed Lesson 7.

IBM

FORTRAN Coding Form

GX28 7327-6 U/M 050**
Printed in U.S.A.

	COMPANY NAME (1-20)	STREET ADDRESS (21-40)	CITY + STATE (41-67)	ZIP CODE 68-72	AMTDUE (73-79)
25	TALLY HO LOUNGE	9 AVONDALE	AKRON OHIO	44310	54760
26	WESTPARK MALL	WESTPARK ROAD	SCOTTSDALE ARIZONA	85268	8560
27	TREETOPS APTS	85 SHERIDAN LANE	SUNNYVALE CALIFORNIA	94087	654321
28	XENON GASWORKS	32 SMITH STREET	VALLEY CENTER CALIFORNIA	91413	756532
29	FARVIEW PLACE	# 8 FARVIEW COURT	SAN JACINTO CALIFORNIA	95103	560545
30	TELEMETERS INC	75 BROADVIEW RD	GROTON CONNECTICUT	06106	443375

PRACTICE EXERCISE

Self-Test Lesson 7
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS Insert the correct word(s) in the blanks below. A vocabulary list is provided.

1. When a record has been deleted the screen will flash and a ___ will appear in the first character position.

2. You use the _____ _____ feature to open up spaces (sectors) within a data set so records can be added.

3. The machine mode W means to _____.

4. During the record insert procedure after all the records have been moved, the newly created spaces will be filled in with _____ _____.

5. Should you wish to delete an entire data set, simply locate the desired data set label, depress FUNCTION SELECT Lower, ___ to select the _____ mode, and depress _____ _____.

Wait
Deleted Records
D
M
Delete Record
Record Insert
Modify

Self-Test Lesson 7
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS Insert the correct word(s) in the blanks below. A vocabulary list is provided.

1. When a record has been deleted the screen will flash and a D will appear in the first character position.

2. You use the RECORD INSERT feature to open up spaces (sectors) within a data set so records can be added.

3. The machine mode W means to WAIT.

4. During the record insert procedure after all the records have been moved, the newly created spaces will be filled in with DELETED RECORDS.

5. Should you wish to delete an entire data set, simply locate the desired data set label, depress FUNCTION SELECT Lower, M to select the MODIFY mode, and depress DELETE RECORD.

Wait
Deleted Records
D
M
Delete Record
Record Insert
Modify

Lesson 8 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to

1. Use the AUTOMATIC DUPLICATION/SKIP function of the machine.
2. Describe the purpose of the PROG NUM SHIFT key.
3. Use the DISPLAY PROGRAM feature of the machine.
4. Alter a program in storage.

Turn the machine on and insert your diskette. Move to data set 00011 by depressing RECORD ADVANCE. If the screen flashes, reset the error by depressing NUMSHIFT and RESET.

Label the data set JOB2. Set your record length at 40. Do you know what your BOE should be? It should be 05001. This data set contains 10 records, so the EOE must be 05010.

At what sector address should your EOD be set? It should be set at 05001.

Depress FUNCTION SELECT LOWER, M, and RECORD ADVANCE.

Depress FUNCTION SELECT LOWER and DELETE RECORD to blank the screen.

Key the following program exactly as shown. The numbers in parentheses indicate the cursor positions for the various Begin Field codes.

```
(001)              (011)   (015)   (019)(021)  (025)
  A . . . . . . . . . A - - - D - - - N - N - - - E
```

Load the program in storage area 1 (Function Select Lower, Program Load, 1).

Depress FUNCTION SELECT LOWER and ENTER.

Depress SELect PROGram and the number 1.

Look at the Practice Exercise. You will key this exercise.

PRACTICE EXERCISE

Employee Name (1-10)	Employee Number (11-14)	Department Number (15-18)	Hours (19-20)	Rate (21-24)
JONAS	1159	A715	42	650
KARL	1362	A715	35	775
LAWRENZ	1412	A715	45	535
MAENT	1057	A715	38	1020
NIETZ	1131	A715	35	885
OPPENE	1763	B500	40	625
PERLE	1111	B500	32	850
QUARLES	1813	B500	41	625
RAIMOT	1199	B500	52	1075
TARLETON	3232	B500	30	1060

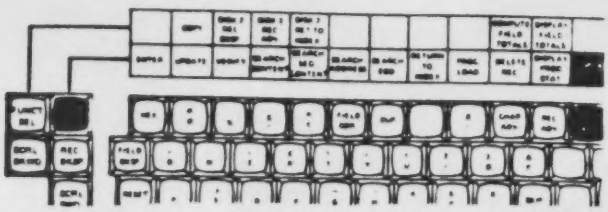
Make sure the AUTOMATIC RECORD ADVANCE switch and the AUTOMATIC DUPLICATION switches are turned off. Make sure the PROGRAM NUMERIC SHIFT switch is set at the ALL CHAR position.

You will key the first record. After you key the employee number (the second field), look at your screen.

Do you see the M in the first position? The reason the machine printed an M is that you typed a numeric character in Alpha field. The Begin Field Code for the second field should have been N and not an A. To correct this kind of error, you must first recall the program to the screen.

Press FUNCTION SELECT LOWER, hold down the Numeric Shift key and depress the DISPLAY PROGRAM function key.

Display Program



The program you stored in Program storage area 1 should now be on the screen.

Move the cursor to cursor position 011 and key an N.

You will now record the changed program.

Press FUNCTION SELECT LOWER, then PROGRAM LOAD, then the number 1 key.

After you have done this, the screen will go blank. Press FUNCTION SELECT LOWER and the DISPLAY DATA key. The machine will return to the same record position as when you first began to key. It is in the ENTER mode.

Depress the SELECT PROGRAM key and then the number 1 key if the program number position reads "0" and not "1."

Now key the first record again. Stop keying when your screen starts to flash.

Depress RESET.

Notice on the status line that the Begin field Code is D. If it is not, check your position indicator. It should read 015. D is the Begin Field Code for numeric fields that are to be duplicated. Since the first character in this field is alphabetic, the correct Begin Field Code is "U." You could alter your program, but let's experiment.

Depress your ALPHA SHIFT key and then type an A.

Now type the remainder of the field. The ALPHA SHIFT key overrides the Numeric Shift of the machine.

Notice that the rate for Mr. Jonas is 650. The field allows space for 4 numbers. Type a space to move to cursor position 022 and then stop.

Look to see if a zero entered in space 021? If you do not want a zero there, CHARACTER BACKSPACE, hold down the ALPHA SHIFT key, and tap the spacebar. You will not get a zero if your zero is on the diagonal key and not the spacebar.

Stop keying when you have typed all of the first record and before you RECORD ADVANCE.

Look at the third field in the source document. Do you notice that the department number is the same for the first five records? The 3742 has the capability of copying fields that have duplicated information. The D Begin Field Code in the third field will tell the machine that the information in the field is to be duplicated.

Turn on the switch marked AUTO DUP/SKIP.

Now turn on the AUTOMATIC RECORD ADVANCE switch. When you get to the Department Number field in the second record, the information will automatically copy and the cursor will move to position 019.

Key the first 5 records and then stop.

The department number changes in the sixth record. Turn off the AUTO/ DUP/SKIP switch.

Key the sixth record. Remember to use the ALPHA SHIFT to override the Numeric BEGIN FIELD Code in the Department Number field.

Turn the AUTOMATIC DUPLICATION/SKIP key on again.

Key the remaining records. When you have finished keying the records, the screen will flash and the machine will automatically Return to Index because you have used all record spaces in the data set. You have learned that when you wish to duplicate a field, you must key the first record with the AUTO DUP/SKIP key in the Off position.

When you have answered the Self Test questions, you have completed Lesson 8.

Self-Test Lesson 8
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the blanks below. A vocabulary list is provided.

1. When you wish to duplicate a field, you must key in the first record with the AUTO DUP/SKIP key in the ___ position.

2. The ___ begin field code will tell the machine that numeric information in a field is to be duplicated.

3. If you wish to override a numeric begin field code, you must depress the _____ _____.

ALPHA SHIFT
D
OFF

Self-Test Lesson 8
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the blanks below. A vocabulary list is provided.

1. When you wish to duplicate a field, you must key in the first record with the AUTO DUP/SKIP key in the OFF position.

2. The D begin field code will tell the machine that numeric information in a field is to be duplicated.

3. If you wish to override a numeric begin field code, you must depress the ALPHA SHIFT.

ALPHA SHIFT
D
OFF

Lesson 9 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to

1. Key information from business forms.
2. Use more than one program for a job.
3. Use the Field Skip function of the machine.
4. Use the Numeric Shift key.
5. Use the FIELD ADVANCE and FIELD BACKSPACE keys.

Turn on the machine and insert your diskette. Make certain the AUTO DUP/SKIP AND THE AUTO REC ADV switch are in the Off position.

Press FUNCTION SELECT LOWER and then press DELETE RECORD. Key the following program.

```
(001)              (021)          (036)              (055)
  A.................A.............A.................S.........
                                   (100)    (108)
.....................................D--------E
```

Press FUNCTION SELECT LOWER, PROGRAM LOAD and then tap the number 1 key.

Now key the second program:

```
(001)                    (026)
A........................A.............................

(061)                                (100)     (108)
A....................................D------E
```

Press FUNCTION SELECT LOWER, PROGRAM LOAD and the number 2 key.

Now key the third program:

```
(001)    (011)    (021)
N---------A.........N-------------------------------------

(061)    (071)                        (100)     (108)
N---------S.........................D---------E
```

Now press FUNCTION SELECT LOWER, PROGRAM LOAD, and the number 3 key.

Now depress FUNCTION SELECT LOWER and RETURN TO INDEX.

Now RECORD ADVANCE to move to data set 00012. Your BOE will be 05011 and your EOE will be 06015. Name the data set JOB3. Your record length should be set at 128.

Now press FUNCTION SELECT LOWER, M, and RECord ADVance.

Look at the first document in the Practice Exercise on page 9-3. Notice that the fields have been coded by the programmer. The program number has also been coded. The billing number is to be duplicated on all records.

Now look at the second document in the Practice Exercise. You will key this order form.

Depress FUNCTion SELect Lower and Enter.

Depress SELect PROGRAM and the number 1 key.

Key the SOLD TO information in the cursor positions indicated. The fourth field is to be skipped. Just depress the SKIP key to move past it. Make certain that you key the BILLING NUMBER in cursor positions 100-107.

When you have finished keying the first record, do not RECord ADVance. Stop keying and look for the FIELD BacKSPace key. It is on the left of the keyboard, above the RESET key. Depress the FIELD BacKSPace key and watch the cursor jump backward from field to field.

Now, find the FIELD ADVance key. It is on the right of the keyboard, beside the SELect PROGram key. Depress FIELD ADVance to move from field to field until you get to the end of the record.

The FIELD BacKSPace and FIELD ADVance keys are used to quickly move about on the record. If, for example, you typed the entire record and then discovered you had made an error in the middle of it, it would be easy to locate the point of the error by using the FIELD ADVance and BacKSPace keys.

Turn on the AUTO DUP/SKIP switch and the AUTO RECord ADVance switch.

You will now record the SHIP TO information.

Depress SELect PROGRAM and the number 2 key.

Key the SHIP TO information in the cursor positions indicated. After you key "Jacksboro, Tennessee," depress the SKIP key. The BILLING NUMBER in cursor positions 100-107 should automatically duplicate and the record should automatically advance.

Depress SELect PROGRAM and the number 3 key.

Key the first line from the order blank portion of the order form. Be sure to key the BILLING NUMBER in positions 100-107.

Key the remaining records. Each line of the order form will take one record. When you have keyed the last line, turn off the AUTO DUP/SKIP switch.

Turn to the second order form. Repeat the same procedure for the second order as you used for the first order.

When you have finished keying the second order form, and have answered the Self Test questions, you have finished Lesson 9.

Sample Order Form

SOLD TO _____ } program 1

SHIP TO _____ } program 2

All records → BILLING NUMBER _____

Program 3

QTY (01-10)	UNITS (11-20)	ITEM(S) (21-60)	PRICE PER UNIT (61-70)

SOLD TO Vann Shipping
7612 Auda Lane
Pikes Peak, Wyoming

SHIP TO Merlyn Van Lines
762 Buona Vista
Jacksboro, Tennessee

BILLING NUMBER 85672888

QTY (01-10)	UNIT (11-20)	ITEM(S) (21-60)	PRICE PER UNIT (61-70)
12	cartons	37625	89460
13	each	17624	77125
75	each	96342	89765
15	boxes	16166	95470
36	each	98740	55000
19	flats	61793	11563

SOLD TO Merlyn Magicians
37642 York St
New York, New York

SHIP TO Merlyn Magicians
15 Sartaga Lane
New Orleans, LA

BILLING NUMBER 96576235

QTY (01-10)	UNIT (11-20)	ITEM(S) (21-60)	PRICE PER UNIT (61-70)
15	cartons	19654	15867
19	boxes	19773	59430
24	flats	18576	10304
36	each	17776	31031
15	each	19222	8626
12	each	19433	1225

Self-Test Lesson 9
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the spaces provided. A vocabulary list is provided.

1. A "S" begin field code informs the machine to ____ that particular field.

Self-Test Lesson 9
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. Insert the correct word(s) in the spaces provided. A vocabulary list is provided.

1. A "S" begin field code informs the machine to SKIP that particular field.

Lesson 10 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to

1. Enter a program with Right Adjusted fields.
2. Key records with Right Adjusted fields.
3. Key negative numbers.

You may never have thought about it, but when you type columns of numbers, they are right adjusted. That is, the last number at the right always aligns.

This	Not This
5762	5762
81	81
567	567
91587	91587

The IBM data entry machine will automatically align numbers and/or words at the right when you correctly program the machine.

Key the following program and load it into Program Storage area 1.

```
(001)              (016)     (021)         (031)         (041)
  I . . . . . . . . . J - - - - R - - - - - - - R - - - - - - - E
```

The I Begin Field Code tells the machine that the first character in the field is alphabetic and that the field is to be right adjusted.

The J Begin Field Code tells the machine that the first character in the field is numeric and that the field is to be right adjusted.

The R Begin Field Code tells the machine that the field is numeric and that the spaces not filled with numbers will be zero-filled. It is also a right adjust field. The I and J fields will fill in blank space to the left of the characters that are right adjusted.

Zero Fill	Blank Fill
05762	5762
00081	81
00567	567
91587	91587

Record Advance to data set label 00013. Name the data set "RIGHTADJ."

Even though you will only key nine records in this exercise, leave space for 10 records. Your BOE should be 06016 and your EOE should be 06025.

Turn the AUTO REC ADV switch on and the AUTO DUP/SKIP switch off. Turn the PROG NUM SHIFT key to ALL CHAR.

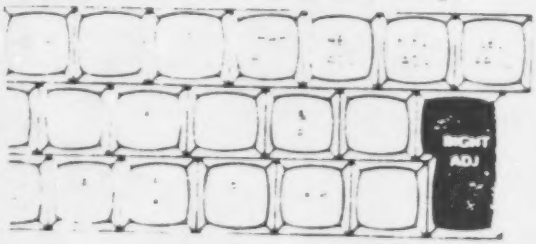
SELECT ENTER and load program 1.

PRACTICE EXERCISE

Description (1-15)	Quantity (16-20)	Code (21-30)	Price (31-40)
Paint	15	953	23565
Roller, paint	144	591	13000
Cheese Cloth	72	683	3600
Sandpaper 00	50	776	4320
Sandpaper 000	50	777	4875
Brush, 2"	100	333	30000
Brush, 3"	75	335	12500
Brush, 4"	25	337	13600
Steel wool	120	625	9000

Key the first field in the first record ("Paint") and then stop.

Find the RIGHT ADJUST key.



Depress the RIGHT ADJUST key. The word "Paint" will shift to the right, and the cursor will exit to the first position of the next field.

Continue keying the fields using the RIGHT ADJUST key to move from field to field.

When you have keyed all of the records, Return to Index.

Negative numbers which are right-adjusted must be keyed in a slightly different manner. Let's perform another Practice Exercise.

Key the following program:

```
(001)                              (016)                              (026)
  Z.............................J--------------------------J
                    (036)
  -------------------E
```

Load the program in Program Storage area 5.

Move to data set 00014. Label the set "NEGNUMS." Set your record length for 37. Allow space for 5 records. Your BOE should be 06026 and your EOE should be 07004.

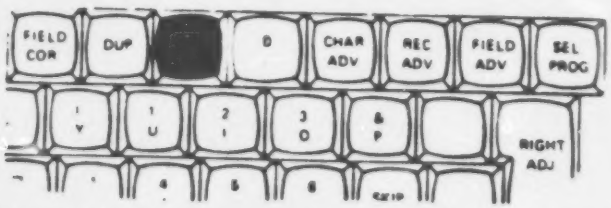
Select Enter and then Select Program 5. Key the word "Shirts," depress RIGHT ADJ to move to the second field.

PRACTICE EXERCISE

Description (1-15)	Amount (16-25)	Balance (26-35)
Shirts	165822-	7563
Shoes	150050-	88721
Belts	1568-	9432
Hats	97625-	857
Gloves	11579-	6125

Key 165822 and then stop. Do not key the minus sign.

Use the Minus (DASH) key to right adjust all negative numbers. Depress the DASH key now.



You will note that the units position of the Amount field has changed from 2 to K. This is a special code that the computer needs in order to distinguish a negative 2.

Lesson 10

The following chart shows the letters displayed for the indicated numbers.

1 = J

2 = K

3 = L

4 = M

5 = N

6 = O

7 = P

8 = Q

9 = R

0 =

Key the remaining records, then Return to Index.

When you complete the Self-Test, you have completed Lesson 10.

Self-Test Lesson 10
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. In the spaces provided, insert the correct word(s).

1. The __ begin field code tells the machine that the first character in the field is numeric and that the field is to be right adjusted.

2. The __ begin field code tells the machine that the field is numeric and the spaces not filled with numbers will be filled in with zeros.

3. The __ begin field code tells the machine that the first character in the field is alphabetic and that the field is to be right adjusted.

4. To key in negative numbers use the ____ ( ) key.

5. When negative numbers are entered into the IBM 3741/42, the units position is changed to an _____ _____. This is a special code that the computer needs in order to distinguish a negative number.

Self-Test Lesson 10
IBM 3741/3742 DATA ENTRY STATION

DIRECTIONS. In the spaces provided, insert the correct word(s).

1. The J begin field code tells the machine that the first character in the field is numeric and that the field is to be right adjusted.

2. The R begin field code tells the machine that the field is numeric and the spaces not filled with numbers will be filled in with zeros.

3. The I begin field code tells the machine that the first character in the field is alphabetic and that the field is to be right adjusted.

4. To key in negative numbers use the DASH (-) key.

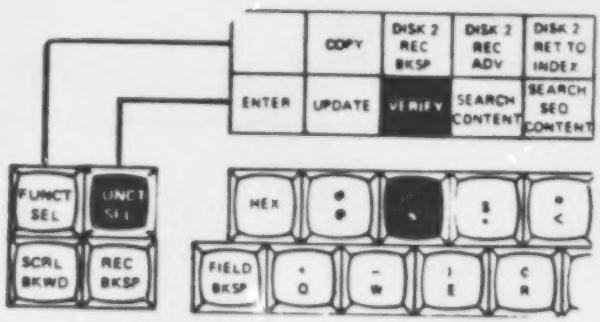
5. When negative numbers are entered into the IBM 3741/42, the units position is changed to an ALPHABETIC CHARACTER. This is a special code that the computer needs in order to distinguish a negative number.

Lesson 11 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to:

1. Verify
2. Identify the Verify Mark on the Data Set Label

The IBM 3741/3742 is designed to allow input operators to check what they have keyed. The Verify function is used for this purpose. After you have initially keyed the records in a data set, you select the Verify Mode of operation and key the records a second time. The machine will compare the original input with the new input, and, if there are differences, the machine will signal a V or an R error.



For this exercise, we will use data set 00013. If your screen does not show Data Set 00013, move to the "RIGHT ADJ" data set by record backspacing or record advancing.

Key the following program and then load it into a storage area of your choice:

```
(001)                    (016)
I. . . . . . . . . . . . . J - - - - - - - - - -

(021)  (031)                (041)
R - - - - R - - - - - - - - - - E
```

Depress Function Select Lower and Verify. The entire first record will be displayed. This allows you to be certain you are at the correct record position.

Select the program you stored.

Turn on the AUTOmatic RECord ADVance switch.

You will key the same records that you have keyed in Lesson 10. As you key

the first character in each record, the screen will go blank. When you key a character that does not match the original input, the screen will flash and a Verify Error Code will appear in the error code position on the status line.

Some mismatches which may occur:

1. The operator presses the wrong key while verifying (Error Code V)
2. There is an incorrect character on the diskette (Error Code V)
3. An entire field is incorrect (Error Code R)
4. A record is missing (Operator must insert record)
5. There is an extra record on the diskette (Operator must delete record)
6. There are too many or too few characters in a right adjust field (R Error Code)

PRACTICE EXERCISE

	Description (1-15)	Quantity (16-20)	Code (21-30)	Price (31-40)
Record 1	Pant	15	953	23565
Record 2	Roller, Paint	145	591	13000
Record 3	Cheese Cloth	17	683	3600
Record 4	Remover	5	772	1852
Record 5	Sandpaper 00	50	776	4320
Record 6	Sandpaper 000	50	777	4875
Record 7	Brush, 2"	100	333	3000
Record 8	Brush, 2 1/2"	75	335	12500
Record 9	Brush, 4"	25	338	13700
Record 10	Steel Wool	120	625	9000

The first error you will correct is in Record 1. The "i" has been omitted from the word "Paint." Begin keying the record as it appears above and stop when the machine begins flashing.

Depress RESET.

Now key the letter "i".

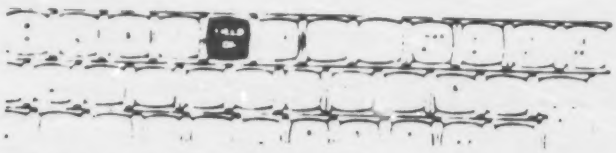
Continue keying the record. Do not forget to use the RIGHT ADJ key to move from field to field. If you accidentally key an incorrect character, simply RESET when the screen begins flashing and then key the correct character.

The second mismatch that you will correct is in Record 2. The quantity amount should be 145, but you originally keyed 144. Key the first two fields and stop when the screen begins to flash.

RESET the error, then continue reading.

Whenever the error to be corrected is on the diskette (that is, if you incorrectly key data when you originally key it), the data must be keyed twice to correct the error.

Find the FIELD CORrect button on the top row of keys.



Depress the FIELD CORRECT key once.

Now key "145". As soon as you have keyed this figure, the cursor will automatically move back to the first position in the field.

Key "145" again and then depress the RIGHT ADJ key.

Finish keying the second record.

The third type of error which has been cited is when the entire field is incorrect. In Record 3, the quantity field should read "17". When an entire field is incorrect, depress the FIELD CORRECT key and key the correct information twice to record the change. Begin keying the information in Record 3 now. Stop when the screen begins to flash.

Press RESET.

Press FIELD CORRECT.

Key the second field twice.

Depress RIGHT ADJ.

Continue keying the record.

The next record was "accidentally" omitted when you keyed the original records for this data set.

You must perform a Record Insert operation. Before you begin, write the address of the <u>next</u> record to be verified on a scrap piece of paper.

Do you remember how to insert a record?

Return to Index.

Depress FUNCTion SELect Lower and SEARCH ADDRESS.

Type the record address that you wrote down on the scrap piece of paper.

Depress RECord ADVance to move you to the record address of the insert.

Depress FUNCTion SELect Lower and SEARCH ADDRESS again.

Type "01" (because you wish to insert one record).

Depress FUNCTion SELect Lower, ALPHA SHIFT, and RIGHT ADJust. This will begin the process of moving all the records after "Cheese Cloth." The Machine Mode indicator should read "N" for "Not Ready." Wait for an R to appear. NOTE. This action will temporarily lock out the other keyboard. As a courtesy, warn the other operator!

Depress NUM SHIFT and RESET because the blanked space for the new record has been filled by a deleted record.

Press SELect PROGram and key in the storage area number where you stored your program.

Type Record 4, which begins "Remover ....."

Press RIGHT ADJUST to record the information.

Press RECord BACKspace to move back to the record you just entered.

Press FUNCTion SELect and Verify.

Now verify the record you just inserted.

The next error you encounter is when a record appears in a data set and you do not want it included. You must delete Record 5. Do you remember how to do this?

Depress FUNCTon SELect Lower and DELete RECord.

The last error you shall correct is when a right adjusted field contains too few characters.

Begin keying Record 6. Stop when the machine signals an error.

Depress RESET.

Depress FIELD CORrect.

Re-key the incorrect field twice.

Continue verifying the remaining records in the data set. When you encounter other errors, perform the corrections.

When you have finished verifying all records, the machine will automatically go to the Index Mode and display the data set label.

Look at the data set label. Do you notice the V in position 073? This V tells you that the data set has been verified.

You have now completed Lesson 11.

Self-Test Lesson 11
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. In the spaces provided insert the correct word(s). A vocabulary list is provided.

1. After you have initially keyed the records into a data set, you may check the accuracy of your input by selecting the _____ mode.

2. During verification, the machine will compare the original input with the new input, and if there are differences, the machine will signal a __ or __ error.

3. During verification, as you key the first character in each record, the screen will go _____.

4. Whenever the error to be corrected is on the diskette, the data must be keyed _____ to correct the error.

5. When an entire field is incorrect, depress the _____ _____ key and correct information twice to record the change.

6. List 6 mismatches which may occur during verfication.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____
   6. _____

FIELD CORRECT
BLANK
VERIFY
TWICE
R
V

Self-Test Lesson 11
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. In the spaces provided insert the correct word(s). A vocabulary list is provided.

1. After you have initially keyed the records into a data set, you may check the accuracy of your input by selecting the VERIFY mode.

2. During verification, the machine will compare the original input with the new input, and if there are differences, the machine will signal a R or V error.

3. During verification, as you key the first character in each record, the screen will go BLANK.

4. Whenever the error to be corrected is on the diskette, the data must be keyed TWICE to correct the error.

5. When an entire field is incorrect, depress the FIELD CORRECT key and correct information twice to record the change.

6. List 6 mismatches which may occur during verfication.

    1. The operator presses the wrong key while verifying.
    2. There is an incorrect character on the diskette.
    3. An entire field is incorrect.
    4. A record is missing.
    5. There is an extra record on the diskette.
    6. There are too many or too few characters in a right adjust field.

FIELD CORRECT
BLANK
VERIFY
TWICE
R
V

Lesson 12 - THE IBM 3741/3742 DATA ENTRY STATION

When you have completed this lesson, you will be able to:

1. Prepare a program data set or diskette
2. Load a program from a diskette.

Until now, the programs you have keyed have been erased when you turned your machine off. It is possible to save your programs by storing them on a special data set.

Insert your diskette and RECord ADVance to Data Set label 00015.

Name the data set "PROGRAMS" and allow space for 5 records. Your BOE should be 06026 and your EOE should be 07004.

Depress FUNCTion SELect Lower and ENTER.

Address 06026 and the Enter Mode should be displayed. This is the address of the first program in your program data set.

Depress SELect PROGram and the 0 key (the spacebar). This will ensure that no other programs are loaded in the machine.

Key the following program:

```
(001)   (005)   (008) (011)
  A . . . A - - - N - - E
```

Press RECord ADVance.

Address 07001 should now be displayed.

RECord Backspace to look at the program. Note that the machine is now in the Update Mode of operation. You could alter this program if you wished to do so. Do you notice in this program the Alpha Begin Field Code in position 005? It is followed by numeric continue field codes. You may mix field codes in this way. An occasion when you might wish to use such a mixed code would be for a department code such as M537.

Record Advance.

Key the following program in Address 07001:

```
(001)   (005)   (009)   (013)   (017)
  A - - - J . . . X - - - R . . . E
```

Record Advance.

Key the following program in address 07002

```
(001)   (005)   (009)   (013)
  U - - - R . . . N . . . E
```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Lesson 12

Return to Index.

In order to load programs from the diskette, the program must first appear on the screen.

Press FUNCTion SELect and Update.

RECord ADVance to the third program you keyed.

Press PROGram LOAD and the number 1 key.

The screen will go blank.

To make sure the program is loaded, press SELect PROGram and the number 1 key.

Press FUNCTion SELect Lower and DISPLAY program.

You now see the program on the screen.

RETURN to index.

When you complete the SELF TEST, you have completed Lesson 12.

Self-Test Lesson 12
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. The below statements are either TRUE or FALSE. Indicate your choice.

T F 1. In order to load programs from the diskette, the program must first appear on the screen.

T F 2. A - - - is an example of a mixed field code.

T F 3. Programs can be only stored in the machine itself.

4. Write mixed field codes for the following:

EXAMPLE:	M674	A---
	6CRT	_____
	J67245	_____

Self-Test Lesson 12
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. The below statements are either TRUE or FALSE. Indicate your choice.

(T) F 1. In order to load programs from the diskette, the program must first appear on the screen.

(T) F 2. A - - - is an example of a mixed field code.

T (F) 3. Programs can be only stored in the machine itself.

4. Write mixed field codes for the following:

EXAMPLE:	M674	A---
	6CRT	N...
	J67245	A-----

Lesson 13 - THE IBM 3741/3742 DATA ENTRY STATION

This exercise may only be completed on the IBM 3742.

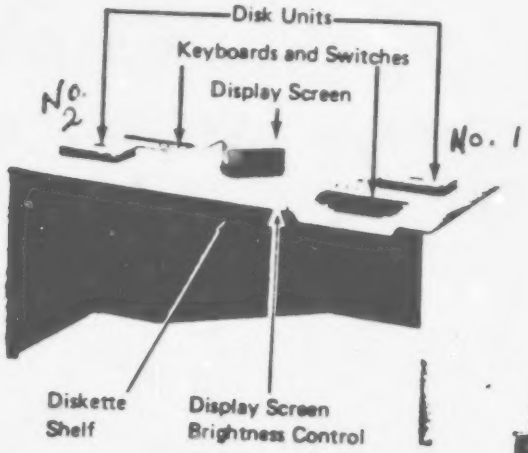
When you have completed this lesson, you will be able to

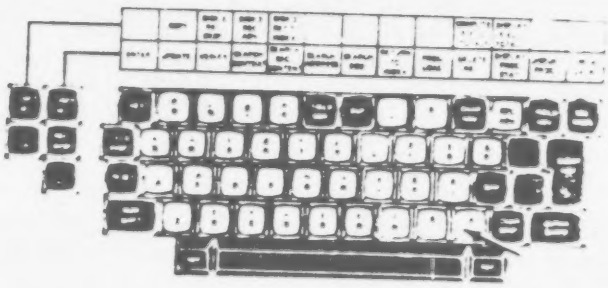
1. Operate the Disk 2 drive station from the Disk 1 station.

2. Copy a data set.

The COPY function is used to copy information from one diskette to another. Often, companies will store away a spare copy of recorded information in case something happens to the original. Sometimes, companies will send copies of diskettes to other company offices.

In the picture below, you see that the diskette drive stations have been labeled "Disk Drive 1" and "Disk Drive 2." The drive unit where the power switch is located is Disk Drive 1.





You will need your own diskette and another diskette for this exercise. Obtain another diskette from the lab para-professional. This diskette will be called a "scratch" diskette. Before you begin, insert the scratch diskette in Disk Drive 1 and re-name and modify data set label 00008 as follows:

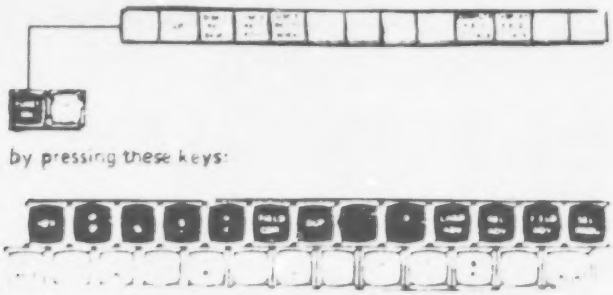
```
001          0 A A                    00008          X R

HDR1 COPYOPS                                128 01001 73026
                                                      01001
```

Insert your diskette into Disk Drive 2. You will copy from Disk Drive 2 to Disk Drive 1. Leave the Scratch diskette in Disk Drive 1.

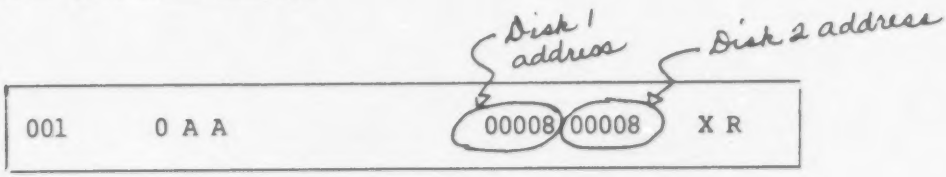
At the Disk Drive 2 station, depress FUNCTion SELect Lower and the letter A.

Look at the top line above the top row of keys at the Disk Drive 1 station. By using the FUNCTion SELect Upper button, you can make the top row of keys perform copy operations and you can manipulate the diskette in the Disk Drive 2 station from the Disk Drive 1 station.



Depress FUNCTion SELect Upper and Disk 2 Return to Index (the [9/2] key).

Look at the Disk Drive 1 Display unit window. On the status line, you will see two data set label numbers.



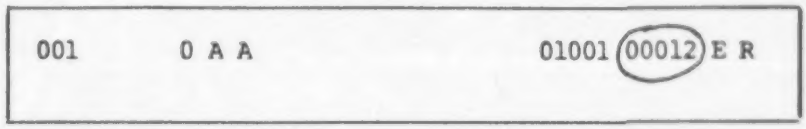
The data set label number on the left is for Disk Drive 1. It is used to tell the machine where to start copying.

The data set label number on the right is for Disk Drive 2. It is used to tell the machine where to stop copying.

delete

Depress FUNCTion SELect Lower and ENTER. Record address 01001 should appear in the Disk Drive 1 address position.

Depress FUNCTion SELect Upper and Disk 2 Record Advance (the [↑] key) until record address 00012 appears in the Disk 2 record address position on the status line of the Disk 1 station.



The machine will use the BOE on the Disk 2 record address to stop copying. Let's begin copying.

Press the FUNCTion SELect Upper key. Hold down the NUMeric SHIFT button and tap the COPY function key.

When the machine begins copying, it will click and an W will appear in the mode indicator position on the status line. Wait until an R again appears.

Depress FUNCTion SELect Lower and Return to Index.

Press FUNCTion SELect Lower and type the letter A on the Disk Drive 1 station keyboard to return the machine to normal two-station operation.

Please note that the data set label name has not been changed. You would have to modify it if you wished a different name than what was originally given to the data set number you copied into (in this case, the name will remain COPYOPS).

Select the Update mode of operation and check your records to make sure the copy operation worked.

When you have completed the Self Check questions, you have completed lesson 13.

Self-Test Lesson 13
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Insert the correct word or words in the spaces provided.

1. The _____ function is used to copy information from one diskette to another.

2. When copying, data is copies from Disk Drive __ to Disk Drive ___.

3. When the machine begins copying, an ___ will appear in the mode indicator position.

4. To return the machine to normal two-station operation after completing copying, press FUNCTion SELect Lower and type the letter ___ on the Disk Drive ___ station keyboard.

5. When copying you see ___ data set label numbers. The data set label number on the left is for Disk Drive ___ and the one on the right is for Disk Drive ___.

Self-Test Lesson 13
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Insert the correct word or words in the spaces provided.

1. The COPY function is used to copy information from one diskette to another.

2. When copying, data is copies from Disk Drive 2 to Disk Drive 1.

3. When the machine begins copying, an N will appear in the mode indicator position.

4. To return the machine to normal two-station operation after completing copying, press FUNCTion SELect Lower and type the letter A on the Disk Drive 1 station keyboard.

5. When copying you see 2 data set label numbers. The data set label number on the left is for Disk Drive 1 and the one on the right is for Disk Drive 2.

LESSON 14 - The IBM 3741/3742 Data Entry Station

When you have completed this exercise, you will be able to:

1. Use the Compute Field Totals function
2. Use the Display Field Totals function
3. Clear the Accumulators

There might be times when you would be asked to use the Field Totals function of the machine. As an example, on a payroll job, you might be required to let the machine add up the columns of figures.

In order to use the Accumulation function of the machine, you must first write two programs: a "Format" program and a "Condition Program."

The "Format" program is used to indicate which field in the records are to be accumulated. The "Condition" program is used to designate in which program storage area the "Format" program is stored. It is used for other purposes as well.

Record advance until the "PROGRAMS" data set (Data Set 00015) is displayed.

Perform a Search EOD operation (FUNCTion SELect Lower and SEARCH EOD).

Press the Record Advance Key. Address 07003 and a blank screen should appear. The UPDATE mode should be in operation. Key the following "Format" program:

```
(001)              (011)   (015)   (020)     (025)
A . . . . . . . . . N 1 - - N 2 - - - N 3 - - - E
```

Press the Record Advance to store the program on the diskette. Press Record backspace to display the program. Now load the program in storage area 1 (FUNCTion SELect Lower, PROGram LOAD, and the number 1 key).

The program that you just created and stored indicates where the data you wish to accumulate is located on a record. There are three accumulators on the machine. The second Begin Field Code is followed by a 1. This indicates that Accumulator 1 is to be used with this field. The number 2 follows the Begin Field Code in the third field, and thus the data in this field will be accumulated by Accumulator 2. Accumulator 3 will be used for the fourth field.

Address 07004 should now be displayed.

Key a "less than" Symbol (<) in position 001. This symbol in position 001 tells the machine that this is a "Condition" program.

In position 002, key a "1".

Now type a period (.) after the "1". Condition statements must end with a period.

Press Record Advance to record the program.

Press Record Backspace to display the program.

Load the "Condition" program in storage area 2 (FUNCTion SELect Lower, PROGram LOAD, and the number 2 key).

Return to Index.

Press FUNCTion SELect Lower and DELete RECord to blank the screen.

Key the following program:

```
(001)              (011)     (015)  (020)     (025)
A . . . . . . . . . N - - -  N - - - - N - - - - E
```

Load the Program in Storage Area 3, then return to index.

Record Advance to Data Set 00017.

Name the Data Set "FIELDACC." Allow space for 5 records. Your BOE should be 07005 and your EOE should be 07010.

Press FUNCTion SELect Lower and ENTER. Make sure the Automatic Record Advance switch is on.

Select program 3.

Key the records in the Practice Exericise

NAME (001-010)	DEDUCTIONS (011-014)	GROSS PAY (015-019)	NET PAY (020-025)
JONES	582	16835	16253
SMITH	675	27832	27157
DOE	1075	37692	36617
JAMES	192	17563	17371
SMYTHE	2073	27695	25622

Return to Index.

To start the accumulation, press the Function Select Upper key and the CHARacter ADVance key.

The records will display very rapidly and then the data set label will return to the screen.

Press FUNCTion SELect Upper and the RECord ADVance key which will activate the Display Field Totals function.

The three numbers you see displayed on the screen are the results of the accumulation. We used accumulation 1 to store the Deductions information. It is the top number. It should read 4597.

We used Accumulator 2 to store the Gross Pay information. The middle number should read 127617.

Accumulator 3 stored the Net Pay information. It is the bottom number 123020.

Press the Function Select Upper, Display Field Totals and Press the R keys to clear the accumulators.

The "Condition" statement can be used to specify specific conditions which must be met before a total is added to the accumulator. We will not practice this because of time limitations. You should remember that the machine has this capability, however, if you wish to learn how to use this feature of the machine, see IBM Manual GA21-9184.

The final exercise you will do in this lesson is to accumulate totals as data is entered. For this exercise, the machine will act as an adding machine. You will key numbers and the machine will accumulate the totals as the numbers are entered.

Press Function Select Lower and Delete Record.

Key the following program:

```
(001)    (006)
  R1 - - - E
```

This is a Right Adjust program.

Press FUNCTion SELect Lower, PROGram LOAD, and the number 1 key.

You should still be at Data Set 00017. We will record over the top of the information we keyed earlier.

Press FUNCTION SELECT Lower and ENTER. Select program 1.

Key the following numbers. Use the the RIGHT ADJUST to record advance:

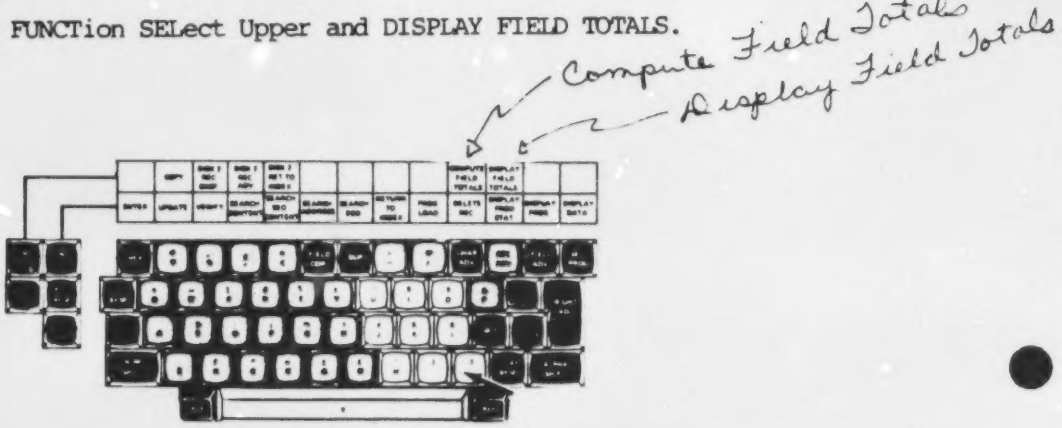
(001-006)

Record 1	582
Record 2	893
Record 3	7652
Record 4	6394
Record 5	6925

Return to Index.

Press FUNCTion SELect Upper and COMPUTE FIELD TOTALS.

Now press FUNCTion SELect Upper and DISPLAY FIELD TOTALS.



The number 22446 should be displayed.

Press R to clear the Accumulators.

Return to Index.

When you complete the Self-Test, you have completed Lesson 14.

LESSON 15 - The IBM 3741/3742 Data Entry Station

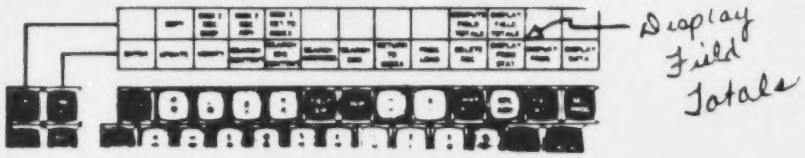
When you have completed this lesson, you will be able to:

1. Define the Production Statistics fields on the display
2. Define the following error codes: B, M, O, R, V
3. Use the Error Recovery section of the Operators Manual

Often data entry operators are held accountable for the number of records keyed, or the keystrokes keyed, during a work day. The IBM 3741/3742 automatically totals this information for you.

Insert your diskette and move to Data Set 00013, "RIGHT ADJ."

Press FUNCTion SELect Lower and DISPLAY PRODuction STATistics.



The screen will look like this:

---

0 X X 0 A A 00013 X R

Record Counter	Keystroke Counter	Verify Correction Keystroke Counter

The first field shows the total number of records keyed, including deletions and additions.

The second field tells the total number of keystrokes it took to write these records. Because students vary, no number is shown here.

The third field tells how many errors were corrected.

Press R to display the data set label again and to reset the counters.

Look in the Operators Guide at the Error Recovery section. The error codes that you most likely will encounter as a beginner are B, M, O, R, and V. Look up each of these codes and carefully read the actions or data set label errors that might cause these errors to occur.

When you have completed the Self Test, you have completed Lesson 15.

Self-Test Lesson 14
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Inset the correct word(s) the in spaces below.

1. In order to use the Accumulation function you must write two programs: a _____ program and a _____ program.

2. The _____ program designates which program storage area the format program is stored.

3. The _____ program indicates which field(s) in the records are to be accumulated.

4. Condition statements must end with a _____ ( ).

5. To clear the accumulators, depress FUNCTion SELect Upper, Display Field Totals and press the ___ key.

Self-Test Lesson 14
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Inset the correct word(s) the in spaces below.

1. In order to use the Accumulation function you must write two programs: a FORMAT program and a CONDITION program.

2. The CONDITION program designates which program storage area the format program is stored.

3. The FORMAT program indicates which field(s) in the records are to be accumulated.

4. Condition statements must end with a PERIOD (.).

5. To clear the accumulators, depress FUNCTion SELect Upper, Display Field Totals and press the R key.

Self-Test Lesson 15
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Complete the following items.

1. What types of production statistics can be obtained from the IBM 3741/42 by using the Production Statistics function?

   a. _____

   b. _____

   c. _____

2. Match the following error codes with their respective cause(s).

_____ B	1. Verify Mismatch
_____ M	2. Operation Error, such as tried to select a program when the cursor wasn't at the beginning of the field.
_____ O	3. Incorrect Data Set Label, such as BOE is greater than EOE or EOD.
_____ R	4. Right Adjust, such as pressed a key after the right adjust was filled.
_____ V	5. Incorrect mode selection.

3. To reset the production statistical counters, depress ___.

Self-Test Lesson 15
IBM 3741/42 DATA ENTRY STATION

DIRECTIONS. Complete the following items.

1. What types of production statistics can be obtained from the IBM 3741/42 by using the Production Statistics function?

   a. Total number of records keyed, including deletions and additions.

   b. Total number of keystrokes.

   c. Total number of errors corrected.

2. Match the following error codes with their respective cause(s).

3	B	1. Verify Mismatch
5	M	2. Operation Error, such as tried to select a program when the cursor wasn't at the beginning of the field.
2	O	3. Incorrect Data Set Label, such as BOE is greater than EOE or EOD.
4	R	4. Right Adjust, such as pressed a key after the right adjust was filled.
1	V	5. Incorrect mode selection.

3. To reset the production statistical counters, depress R.

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